

INTERMENT AND DISINTERMENT ;

OR,

A FURTHER EXPOSITION OF THE PRACTICES PURSUED

IN THE

Metropolitan Places of Sepulture,

AND THE RESULTS AS

AFFECTING THE HEALTH OF THE LIVING

IN A SERIES OF LETTERS

TO THE EDITOR OF THE MORNING HERALD.

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ETC. ETC.

"Such is the harmony always existing between religion and sound policy, that what is acknowledged as decorous and useful by the one, is also commanded and prescribed by the other."—
Ordinance of the Archbishop of Toulouse concerning Interments in Churches.

"SALUS POPULI SUPREMA LEX."

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PREFACE.

THE following letters, republished from the *Morning Herald*, will, it is hoped, furnish material for serious reflection to those who, unacquainted with the whole details of the subject, may not be unwilling to receive instruction from a humble, yet perfectly independent, labourer in a cause of immense importance, whether considered in its tangible physical results, or its indefinite moral relations.

Having resided for years in a neighbourhood in which UNSEEN agencies are abundantly at work to poison the living—called often to the bed-side of afflicted poverty, I have far too frequently found my best efforts impeded, if not neutralised, by the circumstances surrounding the patient. Men's personal follies, vices and crimes, frequently create or induce disease—the air they breathe, not only sensibly deteriorates their health, but determines the duration of their existence. The sophistry that attempts to deny or to refute this allegation is as daring as it is insolent, as ignorant as it is unprincipled, as injurious as dangerous, to the best interests of society. It will, ere long, be admitted that the amount of revenue derived, is not, as it has hitherto been considered, the primary, much less the principal, test of the prosperity of a nation.

The duty of the medical profession in this country is limited to the palliation or cure of disease. Unfortunately, for society and for itself, the profession has not been recognised in its far higher and nobler office, in the elevated position of administrator of a wise and beneficent policy—the policy of prevention rather than the economy of cure. Had such a principle been acted upon, as it ought to have been, it is impossible to calculate the amount of evil that would have been prevented, or the proportion of good that would have resulted, in the single division of public *hygiène* connected with the subject of which these Letters treat.

In the entire absence of the favour of the constituted authorities, it is the duty of the medical profession to point out, to those who have the power of remedy, such causes as they are convinced operate injuriously upon the health of individuals and the public. With this view, after collecting a number of facts bearing immediately upon the matter now under discussion, I published, in the year 1839, a work entitled “Gatherings from Grave-Yards.”*

In the year 1840, a Select Committee of the House of Commons, of which Mr. Slaney was Chairman, was appointed “to inquire into the circumstances affecting the HEALTH of the inhabitants of large towns and populous districts, with a view to IMPROVED SANATORY REGULATIONS for their benefit,” and by that Committee much information of great value was obtained. Its inquiries were, however, principally directed to the effects of badly drained and ill-ventilated localities upon the health of their inhabitants.

Desirous of presenting to the public some further facts, together with his evidence before Mr. Slaney's Committee, the writer published a pamphlet,

* “Particularly those of London, with a concise History of the Modes of Interment among different Nations, from the earliest periods; and a detail of dangerous and fatal results produced by the unwise and revolting custom of inhuming the DEAD in the midst of the LIVING.”—London: Longman and Co.

principally for gratuitous distribution;* and that pamphlet there is reason to believe tended still further to direct inquiry to this matter.

Mr. James Anderton, an active and able member of the Common Council of the city of London, moved, at a meeting of that body, on the 18th March, 1841, "that it be referred to the City Lands Committee to examine into the means of sepulture in the city of London, and the state and condition of all the churchyards, places, and vaults, for burying the dead therein; and also whether it is expedient that an end should be put to the interment of the dead within the City, and to report thereon to the Court." The result is thus noticed in the *Times* of September 24, 1841:—

"The Report from the above Committee, upon reference to examine into the means of sepulture in the city of London, stated, that the most minute inquiries had been made into the subject, and that the Committee were unanimously of opinion that the Court should petition Parliament to prohibit the burial of bodies within the City. (Loud cries of 'Hear, hear.') The Report was agreed to by acclamation, and petitions to both Houses of Parliament were ordered to be drawn up and presented in the usual form."

The petition presented by the Sheriffs of London at the bar of the House of Commons, in February, 1842, states—

"THAT the burial of the dead in the midst of large and populous cities and towns is injurious to the health of the inhabitants. THAT the means of sepulture within the city of London are insufficient and inadequate. THAT the crowded state of the churches, churchyards, and burial-grounds, within the said city, is extensively offensive and dangerous to the health of the inhabitants of the said city. THAT it therefore appears to your petitioners to be expedient that further interments in the churches, churchyards, and burial-grounds, within the said city, should be prohibited; and that proper places of interment should be provided without the limits of the metropolis."

Almost simultaneously with the above, the following petition was presented to the House of Commons by W. A. Mackinnon, Esq.; and a Select Committee, of which the honourable gentleman was appointed Chairman, commenced the examination of witnesses on the 17th March, and concluded it on the 5th May:—

"The humble Petition of George Alfred Walker, Surgeon, of 101, Drury-lane—

"Sheweth,—That your Petitioner has carefully inspected the majority of the places at present used for interment in the metropolis, and is prepared to prove that for some years past they have been very inadequate for the reception of the dead.

"That your Petitioner would humbly invite the serious attention of your honourable House to the fact, that where the utmost vigilance should be exercised, and the greatest care employed, there is, under the present system of inhumation, an entire absence of every precaution; for, in the most densely-populated districts, burial-places exist which are dangerously overcharged, and in many such localities bodies are placed one above another, and side by side, to the depth of 25 or 30 feet, the topmost coffins being but a few inches from the surface.

"That receptacles for the dead underneath or near churches or chapels, have been and continue to be crowded to an incredible extent: thus elaboratories of malaria are day and night in operation, and constantly diffusing their injurious products.

"That the placing of bodies in lead affords comparatively no protection to the health of the public; for, although the process of decomposition is less rapid under a medium temperature, as in vaults, the expansive force of the gas is such, that the lids of coffins frequently become convex, and sometimes are rent asunder, and the gases thus and otherwise disengaged become diffused and mixed with the atmosphere, and enter the lungs in every inspiration.

"That in warmer climates, and in our own, exhalations from dead bodies have in many instances seriously injured health, and in some have immediately destroyed

* "The Grave-Yards of London; being an exposition of the physical and moral consequences inseparably connected with our unchristian and pestilential custom of depositing the Dead in the midst of the Living; with the examinations of the Author, on this highly important subject, before a Select Committee of the House of Commons."—Longman and Co.

life. In confirmation of the latter assertion, your Petitioner would humbly direct the attention of your honourable House to the death of two men upon the opening of a grave in Aldgate churchyard, in the month of September, 1838, and to a yet more recent instance, in the death of William Green, a grave-digger of St. Margaret, Westminster, and the subsequent illness and death of the surgeon in attendance, and his female domestic, who both sank within a few days of the grave-digger.

“ That your Petitioner is convinced, from long observation, that the keeping of dead bodies for a period of many days, and during warm weather, more particularly in densely populated and ill ventilated neighbourhoods, is a practice highly injurious to the health of the living, and requires the interference of your honourable House.

“ That from sources of information on which your Petitioner has the fullest reliance, he is convinced that the evils arising from the present system of interment are not confined to the metropolis, but exist in a proportionate degree in the cities and populous towns throughout the kingdom, and in some of the dependencies of the British Empire.

“ That your Petitioner believes he his performing a public duty in thus expressing his conviction, that the majority of the places for the interment of the dead are so many centres of infection, constantly giving off noxious effluvia, which, according to the circumstances of locality, atmosphere, and the power of resistance in those subjected to its influence, operate as a slow or energetic poison.

“ Your Petitioner therefore humbly and earnestly prays, That a Committee of your honourable House may be appointed, or such other means employed as your honourable House in its wisdom may deem necessary, for the purpose of instituting a full and searching inquiry into the condition of the burial-places of the United Kingdom, your Petitioner believing that such evidence will be elicited as will convince your honourable House of the necessity of a revision or abrogation of the existing laws relative to burial, or of the total and absolute prohibition of the interment of the dead in the midst of the living.”

Some of these allegations, made before the Imperial Parliament, the writer proved; the remainder, substantiated by the evidence of others,* show that the citizens of London have not, and much less have the inhabitants of the provinces, the slightest conception of the practices pursued in many so-called depositories for the dead. The Dissenters, among whom I number many most valuable and highly-esteemed friends, will, I trust, neither deceive themselves, nor suffer themselves to be deceived by others. The support of *principles* need not for a moment require the persistence in PRACTICES too frequently as systematic in their projection as they are odious and infamous in their operation.

G. A. W.

101, Drury-lane, London, January, 1843.

*The Report states, that “after a long and patient investigation, your Committee cannot arrive at any other conclusion, than that the nuisance of interments in large towns, and the injury arising to the health of the community from the practice, are fully proved.”

INTERMENT IN CROWDED TOWNS.

LETTER I.

[From the Morning Herald, November 4.]

SIR,—At the present period, when the Parliamentary recess gives a sort of breathing-time from political discussions, an opportunity offers of investigating certain evils of our social system, which are, or ought to be, totally unconnected with personal interest, or with party or political bias.

It may, perhaps, appear superfluous to refer to a subject of so unpleasant a nature as the atrocities of the grave-yard system in crowded towns—a subject which has been treated of by persons far more capable of doing justice to it; but experience shows, that unless even acknowledged grievances are reiterated and exemplified, it too often happens that they are totally lost sight of. It has been with me matter of serious reflection, whether any further exposition should be made of the practices pursued in many of the metropolitan grave-yards. Evidence, proving the disgusting, immoral, and unhealthy tendencies of intra-mural burials in confined spaces, has very recently been adduced before a Committee of the House of Commons. With the details of that evidence I am intimately acquainted, and moreover with many of the sources of its truth. It is much to be desired that our conservators of morality and decency should inform themselves of its disclosures, which, in truth, are a “recital of deeds the most inhuman, revolting, and abominable, that were ever perpetrated by the most depraved, brutal, and monstrous class of the human species.”

The *truth* of the statements made before Mr. Mackinnon’s Committee, appointed to inquire into this subject, having been denied—and that, too, in language ill-befitting the high, the paramount, importance of a subject in which the interests of a great *nation*, as well as those of *individuals*, are concerned, and the exceptionable clauses of a Bill to remedy such a state of things as *I know, and will prove, to exist*, having been seized hold of to excite the prejudices of a highly respectable body of religionists, who are, if I mistake not, very capable of forming their own judgments on the subject of intra-mural interments, if the facts were *fairly* set before them; it is from a conviction that it is necessary to challenge opposition, to invite discussion, and to reveal what may be necessary for the further elucidation of this most important subject, that I have ventured to request your powerful co-operation. I alone am answerable for my opinions. In the absence of a better advocate, I propose occupying his place, and all I request from you, as the Editor of an influential journal, is that you will grant me “a fair field and no favour.”

It has been said, by the organ of the religious body already referred to, that a “system of deceptive agitation has been carried on ever since the opening of the cemeteries,” that “the two great Leviathans of the daily press, and the hebdomadal reptiles of the Sunday, the foul fraternity that live by pandering to the low passions of the low-minded multitude,” have been enlisted in the services of the cemeteries. So sweeping a charge certainly does not affect *me*. I have never been connected, directly or indirectly, with any cemetery; I have nothing to gain, nothing to lose, by the agitation of the question of intra-mural interment. If at any time during my (I take leave to say, honest and disinterested) exertions in this cause, I have made assertions which I cannot prove, after having for years taken all the pains of which I am capable in assuring myself of the correctness of my *facts*, before I drew from them my deductions; if I have endeavoured to lay open the workings of the system without good and sufficient cause, I deserve censure; if, on the other hand, I can now demonstrate that I have understated the entire case, your readers, Sir, will agree with me that the results of a man’s convictions, if sincere on any subject, but more especially on such a one as this, are entitled to respect;

and that abusive language and vague accusations are not the weapons to employ, where close reasoning and cautious inference should alone be admissible.

The evils resulting from intra-mural sepulture are not of a stationary character, but are daily and hourly on the increase. It is an evil that afflicts all classes of the community. The individuals who have upon principle opposed extra-urbem interment (and I address myself to those only who have employed fair and honourable argumentation) will find that at starting they must grapple with facts and principles, the results of observation and experience, which will bear the ordeal of the severest criticism. The effects of interments in crowded localities—although perhaps not strikingly appreciable by the great mass of the community—are notwithstanding, as history and observation have proved, dangerous to the living. The very insidious nature of the evil renders its operations the more certain. If some, who are looking to *effects* and providing for *consequences*, would take the trouble of investigating *causes*, they would be surprised at their own apathy and want of perception. Many of our most able physicians, although they have explored with the utmost perseverance the character and seat of the various ills to which flesh is licit, and tested with the most rigid scrutiny the comparative value of the several modes of medical treatment, have nevertheless most unaccountably witnessed sickness engendered by wholesale, without attempting to remove the causes by which most incontestibly it is daily produced. Many concurring circumstances, which I need not at present pause to examine, have tended to produce this result. And yet nothing can be more self-evident than that a correct estimate of the extent of an evil is as indispensable as the first step towards its radical extermination.

It has been asserted that evidence of the baneful effects of over-crowded burial-places has been received from those alone who are immediately connected with the interment of the dead, and consequently more obnoxious to the evil, than others situated differently. This view of the case, although narrow and circumscribed, does not in the slightest degree invalidate the arguments adduced by those who from experience and mature deliberation have come to a conviction of the unhealthy effects of the practice which they denounce. Those who have objected to the best attainable testimony upon the subject—that of the grave-diggers—have carefully kept out of sight the fact of the unwillingness of other witnesses to give testimony *against* the nuisance.

This was particularly exemplified in the examination of several witnesses—upon whose evidence I shall beg to be allowed to make, at a subsequent period, a few practical observations. It is lamentable that any should be found whose necessities have compelled them to undertake such employment as that of some of the witnesses examined before the Committee. Of these men it may truly be said, that their “poverty and not their will” consented. The blame, the criminality of such acts and such consequences, rests mainly, however, upon the heads of those who have superintended, or connived at, or profited by, the transgression. And after all, the testimony of grave-diggers, degraded and brutalised as they too frequently must be by the execution of the abominable work imposed upon them, is at least as worthy of credence as the *interested* testimony of those who would care not who may suffer, so that they themselves are advantaged, and who, to attain that object, make every effort to retain possession of, and to employ, many of the present places of sepulture, even although it can be demonstrated that such places are injurious and destructive to the health of the community.

What would be thought of a man who could argue that the more unhealthy the atmosphere we inhale the more healthy we become? And yet some there are who, although they do not expressly state such to be their belief, would by their actions lead us to infer it. There are others who, unable to deny the importance of the subject, or to gainsay the facts adduced, contend that although you may be right in some degree as to the evil consequences of the practice, yet there is much exaggeration, and that statistical documents are required to establish to his or their satisfaction that you are correct on *all* points. Again, some argue that from this source the HEALTH of large towns is not at all affected, at least not more so than formerly—a period to which many refer as a termination to all further argument. Admit, however, for the sake of argument, that the present state of the PUBLIC HEALTH is not so alarmingly bad as to excite universal apprehension—that the health of the metropolis is not materially different from that of other cities and towns; admit, I say, that under the disadvantages of the present system the state of health is tolerably good (which, however, I by no means believe), would it not be rational to suppose that if the objectionable practice of interment in towns were discon-

tinued the standard health of their living inhabitants would be raised—to say nothing of the more respectful treatment of the bodies of the dead ?

During centuries the inhabitants of London and other cities and towns in the empire have been guilty of the folly of interring their dead in the midst of the living. The slightest reflection will convince us, that results injurious in the highest degree must have followed. The rich interred, at the price of gold, in the vaults, aisles, and galleries of the House of God, have corrupted the atmosphere of our churches and chapels ; the poor, unable to purchase a distinguished or even a secure resting place, are packed in masses in common graves, varying as to locality and other circumstances, from 20 to 30 feet deep.

If exhalation of gases, unfriendly to, and even destructive of, animal life, is constantly, but more especially in the warm season, taking place from the surface of our grave-yards, from vaults and other receptacles for the dead, what responsibility must rest upon those who, in defiance of energetic remonstrance, continue to place bodies, and even attempt to justify the practice, in masses and side by side in our already overgorged burying-places !

If indiscriminate mutilation and disturbance of previous deposits, and consequent desecration of the last resting-places of those who have preceded us, are still to be permitted ; if the ashes of our deceased countrymen are entitled to, or obtain too frequently under the present order of things, no respect ; if the ties of relationship and affection and the best feelings of the heart are to be outraged by a trading sexton or a brutal grave-digger ; if a system has too long been, and continues to this hour, in operation, which most unequivocally tends to brutalise, to unchristianise, the officials who execute the disgusting work, and the crowds of people exposed constantly to such scenes ; if our very beautiful burial-service has been too frequently disgraced by the acts perpetrated previous or subsequent to its performance, it is more than time that such an evil were crushed, and for ever ! It degrades religion, brings its ministers into contempt, tends to lower the standard of morality, and is a foul blot upon our boasted civilisation.

I have the honour to be, Sir,

Your most obedient servant,

GEORGE ALFRED WALKER.

London, November 3, 1842.

LETTER II.

[*From the Morning Herald, November 11.*]

SIR,—London, whose “enormous body is composed of nearly 10,000 streets, squares, places, terraces, lanes, alleys, &c., with a population of nearly 2,000,000 souls,” has upwards of 150 places for the burial of its dead, whose numbers amount to about 50,000 annually. It will occur to your readers that the disposal of the bodies of 50,000 beings who once possessed the same living attributes as themselves, involves, as I have hinted in my first letter, some highly-important questions—medical, moral, and political. I believe, Sir, I shall be able to show that, to make out a case against the existing system, neither speculative theories nor flimsy sophistries are required, but that a strict attention to facts founded upon actual observation, backed by experiment, will lead to the conclusion at which the writer has long since arrived, viz., that either gross ignorance or moral cowardice, or a combination of both, has heretofore prevented the general denunciation and complete extermination of the practices which it is my task to expose.

This reflection leads me to a principal division of my subject. How, for instance, can a burial-place well known to have been years ago pre-occupied by tenants, receive fresh additions ? Have the number of burial-places opened from time to time been commensurate with the rapidly-increasing population, and consequent increased mortality in all our large towns, within the last 50 years ? In what localities have such places been principally opened ? Has any sanatory surveillance been exercised over them ? Has the proximity of the majority of these burial-places to the abodes of the living been productive of good or of evil consequences ? Have the moral and physical results to the popu-

lation of such localities been negative or positive? Are not means employed to make room for new tenants? Must not the continual turning up of the soil (for in many such places it is dark, cohesive, and smells palpably of its *human* composition), saturated as it is with putrid animal matter, contribute to diffuse around the invisible germs of disease? Will any one venture to assert that health is uninjured in such an atmosphere? These are questions that deserve serious attention. Some there are who, knowing better, but being anxious to lose no opportunity of prolonging a system now tottering to its foundations, have resorted to misrepresentation and a suppression of facts. What say they to the considerations involved in the points now mooted?

It appears to me that medical men are best fitted to analyse *the causes of disease*, from their varied and daily opportunities of practical observation in their intercourse with every grade of society. The parties interested in the continuance of the present system of sepulture, and especially in the continuance of existing localities, have never uttered a single complaint against the evils of such system or such locality—have never put on record a single remonstrance, and hence it is to be presumed they believe that the practices now prevalent are not injurious to the public. Unfortunately, however, the public are less careful to rid themselves of the evil than the parties referred to are anxious to perpetuate it. The thousands, comprising the public, have no substantial bond of union, while the few individuals whose interests in this matter are opposed to those of the community, combine to keep up their craft, and cloak their *personal* ends in affected zeal for “those time-hallowed spots in which our forefathers have rested for centuries.” I admit that some of “these time-hallowed spots” were, at a long-distant date, adapted to their purposes and uses. The names of some of them would imply that such really was the case. Thus, for instance, St. Giles-in-the-Fields, and St. Martin-in-the-Fields, were not then, as now, surrounded with houses inhabited by a numerous population, but open spaces, where the dead might be deposited without injury to the living.

The practice of interment in towns has been the subject of pretty general notice during some years past. The views promulgated by the instrumentality of the press have been well discussed, and I have no doubt are well understood by those best able to judge of their intrinsic merit. Parties most interested in the continuance of metropolitan interment have had every opportunity of rightly understanding the subject under consideration, yet, until within the last few months, not a step was taken to remove the evil so justly complained of, but, on the contrary, obstructions have been thrown in the way of inquiry, and the consequent elucidation of the truth. Has this arisen from any doubt of the validity of the arguments employed against the continuance of the system? Has it arisen from a conviction that the outline was too boldly drawn, or that the picture was too highly coloured? Whatever circumstances have combined to produce this inactivity, it must be admitted, that those influenced by such circumstances constitute but a small portion of the intelligent and influential part of the community.

Let any one look with an unprejudiced eye at the actual state of the metropolitan burying-places, densely surrounded, as they too generally are, with a swarming living population. Let him examine the vaults crowded with dead, over which frequently, divided by a thin covering, he must sit during divine service. Let him reflect, that in the body and aisles of many churches and chapels, graves and vaults are employed for the interment of the previous living worshippers, and that the occasional opening of such vaults, charged with deadly products, has produced serious, and even fatal disease. Let him further reflect, that the entire practice is left to the management of the lowest class of the community, whose brutal fool-hardiness is stimulated by drink, and by the consciousness that their lives are worth little to themselves, and less to society. Let him think of these things, and let him ask himself whether alteration of the present system be not imperatively required, and that immediately. The subject is one which has called forth a Parliamentary investigation. Certain parties complain that this inquiry has been too partial, and they desire a “re-opening” of the inquiry. Be it so. They have connected me with the previous one. I shrink not from identifying myself with a second, and I hereby pledge myself, that I will furnish material for some further disclosures of a most extraordinary character, connected with spots which I am prepared to specify; and as the testimony of grave-diggers does not content them, perhaps the evidence of an entire neighbourhood may.

The more one contemplates the serious injury done to the population of our

large towns by our present system of internal sepulture, the more is he lost in wonder that the people, generally sufficiently alive to a perception of what they consider prejudicial to their interest, do not arise *en masse*, and demand as an act of justice, and as a matter of right, that many, if not all, these places should cease to be employed. If the necessity of suppressing the nuisance complained of has years since been by others tacitly admitted, how much more necessary is it that as time progresses, and population continually increases, whilst the burial-places are comparatively decreasing, all who are interested in the well-being of the community should be up and doing. The history of the burial-places, and the modes of burial adopted by the ancients, proves that although they infinitely surpassed us in their veneration for their deceased friends, yet, with a wise prudence, they would not permit the dead to inconvenience the living. Upwards of 2,000 years since, the Decemviri prohibited in the following words the burying or burning of any dead body in the city:—

“Hominem mortuum in urbe ne sepelito neve urito.”

In England the *salus populi* is not *suprema lex*. The French, fickle and volatile, alternately generous and brutal, previous even to their most bloody revolution, took care to remove their dead outside the city. Their celebrated catacombs are tenanted by the bones of those who, in the darker ages, rested in the centre of the metropolis. We in England arrogate to ourselves, and in some instances with justice, a superior state of civilisation and refinement as compared with other nations, but in this respect our country is in the rear, not in the van, of civilisation. How imperfect will be our projected improvements, our triumphal arches, pillars, statues, the enlargement and beautifying of our streets, when these are either surrounded by, or surround, such places of burial as now exist! Sums of money have been voted for the purpose of laying out parks as places of recreation for the middle and poorer classes of society, and much stress is laid upon the beneficial results looked for by allowing these classes the benefit of fresh air. I yield to no one in my anxious wish for the improvement of my fellow countrymen, and I am quite sure that a most sincere desire exists among our legislators for the amelioration and improvement of the public condition. If we reflect that the inhalation of fresh and *comparatively* pure air is barely available once a week to the majority of our population in towns—if so frequently—and that it is at once neutralised, and more than neutralised, by a six days' residence in a filthy, badly-ventilated house, in perhaps a filthy locality, made still more dangerously unhealthy by the sweltering decomposition of masses of human bodies, we are at once reminded of the old proverb, “Charity begins at home;” and surely charity could not be better employed than in annihilating the sources of contagion, arising from practices of which the very Gotbs and Vandals would have been ashamed.

I have the honour to be, Sir,

Your most obedient servant,

GEORGE ALFRED WALKER.

London, November 9, 1842.

LETTER III.

[From the *Morning Herald*, November 16.]

SIR,—Having made repeated and particular inquiries into the subject I have undertaken to discuss, it may be permitted me, before proceeding with proofs of injury to health and loss of life occurring in our own and in other countries from the emanations of dead bodies, to offer to your readers a calculation of the number of bodies (admitting for an instant that no injury results from the burial of the dead in the midst of the living), that might be decently and properly interred in a given space.

An acre of ground contains 43,560 square feet. Now, keeping always in view the necessity of a *lateral* surface of earth, as well as a superior one, to prevent exhalation of the most disgusting, and perhaps the most dangerous of all odours, into the atmosphere, in this space may be interred 1,361 *adult* bodies. Let us further elucidate this proposition—for I am anxious, Sir, that the public may clearly understand the figures, lest they should not comprehend the deductions. The mean average of an adult coffin being 6 feet by 1 foot 6 inches, the space required for its disposal will be

9 superficial feet. Let us allow then 8 feet in length, and 4 feet only in breadth, this will give 1 foot of earth at each end, and 1 foot 3 inches of earth on each side of the coffin; decency requires, and the public health demands, that as far as possible every precaution should be taken against the elimination of poisons into the atmosphere, which though invisible, are, and have been, irresistible.

A child's coffin of seven years of age, will measure 4 feet 6 inches by 1 foot 3 inches, or 5 feet 7 inches superficial.

The coffin of a child three years old, will measure 3 feet 6 inches by 1 foot 2 inches, or 4 feet 1 inch superficial.

The coffin of a child 12 months old, will measure 2 feet 6 inches by 10 inches, or 2 feet 1 inch superficial.

Thus the mean average of superficial surface required for the interment of children of the respective ages of 7, 3, and 1, will be 3 feet 11 inches—say 4 feet. An acre of ground would be occupied and decently possessed by 1,361 adult dead bodies, allowing 32 feet superficial for each interment; if brick or stone vaults be employed, as is frequently the case, the ground thus bought in perpetuity must be deducted from the number of feet available for fresh comers. Of the bodies of children of the respective ages of 7 years, and 3 years, and 12 months, 5,124 would occupy an acre of ground.

Denying, as I most unhesitatingly do, the right which is too frequently exercised of ejecting bodies from their graves, we will suppose 1,361 bodies placed in an acre of earth, and that ten years is the lowest possible period that ought to be allowed for the destruction of the human body in graves, 136 adult dead bodies may be interred yearly in the above space, extending over a period of ten years, before the burying-place would be occupied. The bodies of children should have the same division of earth between them as adults. The greater number of the grave-yards in London are in some measure pre-occupied with monuments, tombs, head-stones, &c. The friends of each occupant of the tomb (be it remembered, with or without a distinctive mark of identity on the surface) have frequently purchased the right, or at least they believe so, of perpetuity in his narrow house. Observation has convinced me that the dead body, when buried at a proper depth, is not consumed in ten years in a *dry* soil. The *desséchement* of the body will depend almost entirely upon the nature of the soil, the action of the sun and air upon its surface, and the *depth* at which the dead body is interred. In a *moist soil*, although a dead body will “last” much longer, the primary putrefactive process is much more rapid, and consequently the danger to those breathing such an atmosphere is much greater. After a shower of rain, and during the warm season, the air in London is *sensibly loaded with and corrupted by the emanations of the dead*: thus, for example—I have frequently distinguished the peculiar putrefactive odour in the neighbourhood of Parliament-street, emanating principally from the surface of St. Margaret's church-yard, and from other overcharged burying-grounds in this and my own district. This remark does not apply exclusively to the above overcharged burial-places; I have in other localities, long ago, made the same observations.

Now, reverting to our previous calculations, as to the size of adult coffins, I am of opinion that 32 feet superficial are required for the decent and proper interment of an adult body. The mortality among children, up to a certain age, is known to be higher than among adults, and we have seen that the mean average size of their coffins is 4 feet. I have stated that 1 foot 3 inches of earth should be allowed on *each side* of adult or other coffins, and 1 foot *at each end*. This calculation will require 8 feet 6 inches superficial as the mean average for the graves of children. I give here a too liberal calculation as the representative of the PUBLIC, but then there are PRIVATE rights, and vested interests, and ground and space are certainly valuable. In this country, owing to the gross neglect of public hygiene, it is as difficult to define a nuisance as to abate it. It has often appeared to me most remarkable, that a great nation, deservedly perhaps boasting itself of its free institutions, should have permitted, through the laxity of its municipal regulations, many causes of disease to go unchecked, if they have not even offered premiums to the wrong-doer. At length, however, our legislators have acknowledged that the conduct of selfish, unprincipled, or ignorant individuals, requires correction, that the strong arm of authority must arrest their practices, and make them responsible for their conduct. The public have formed unions and societies of every imaginable name and kind, for mutual protection. It is a singular and most anomalous state of things, that in the nineteenth century there is not a single regulation to protect the health of the compact population of the most magnificent empire upon earth. The most stringent enactments are in force to protect the person from violence,

or the property from spoliation, but the protection of the national health has as yet been unattended to—has been left entirely to chance. It is difficult to educate a people up to a necessary point of appreciation of their own best and truest interest—the preservation of the physical and moral health of themselves, as individuals, and that of the community, of which they form an integral proportion.

Much, very much might be well and wisely written upon the debasing consequences resulting from the practice of interment amidst crowded populations; this, however, falls within the province of the moralist rather than my own. It is with the most sincere respect for the ministers of religion that I would again urge upon them the necessity of devoting their immediate attention to this most important subject.

London contains, principally within its most densely-peopled districts, an immense number of depositories for the dead; the numbers requiring burial are perpetually increasing, yet the spaces allotted for interment remain in *statu quo*, or very nearly so, the few exceptions to this proving the general accuracy of the statement. If we take eight burial-places out of ten, we shall find that they are the same in superficial contents to-day that they were twenty or thirty, or a greater number of years ago, and that, as regards many of these places, it was, years since, the opinion of persons well informed in such matters, that they could contain no more bodies.

By the exercise of a system of “management,” however, they continued to find room for fresh comers, and they will continue to do so until a legislative enactment to prevent the practice is carried. That an urgent necessity does exist for the interference of the legislature, has, I think, been abundantly proved; and I regret to find that any one should be excited to violent and unreasonable opposition, and more especially that misrepresentation should have been employed.

With your permission, Sir, I will in a future letter give more particular information respecting the number of interments, the mode of burial, and other statistical data, which I trust will cause the hitherto apathetic and unconcerned participator in the evils complained of, to bestir himself, and commence a personal and practical investigation, the results of which, if made public, could not fail to produce incalculable benefit to the nation at large. I shall likewise leave the question as to the policy of the present system—the indecency of perpetuating it—the frauds practised—and the modes of “management” adopted, to a future paper, in which I will, by analysing data, endeavour to establish the truth of the statement, that a greater and more monstrous evil than intra-mural sepulture does not exist.

I have the honour to be, Sir,

Your most obedient Servant,

GEORGE ALFRED WALKER.

London, November 14, 1842.

LETTER IV.

[From the *Morning Herald*, November 23.]

SIR,—I demonstrated, in my last communication, that an acre of ground will contain the bodies of 1,361 adults, and of 5,124 children of the respective ages of 7 years, 3 years, and 12 months. Four children of the above ages will occupy about the same space of ground as one adult. London will require, the annual mortality being 50,000, *half a million* of graves every ten years for the bodies of its dead. The *annual number* of burials in England and Wales, upon an average of 5 years, is 335,968. The mode in which this number of bodies is *annually disposed of* is a matter of greater consequence to the living than they are at present aware of. This I shall prove as I proceed.

It is much easier to ascertain the mortality for any given past period, than to determine correctly the accommodation, as to space, for the interment of a certain number of bodies; and, although the aggregate amount of accommodation might be ascertained by an official inquiry, yet the number of dead already deposited must be, to a certain extent, matter of speculation rather than certainty. The omission, on the part of Mr. Mackinnon's Committee, to ascertain the collective amount of such accommodation is to be regretted. I repeatedly, and urgently, pressed this point

upon the attention of the honourable gentlemen. In the absence of evidence as to the size of the grave-yards, we will examine the facts in our possession. Although *all* the OLD PARISH BURYING-GROUNDS and vaults have been long since subject to neglect, repletion, and in some instances to violation, yet private grounds have from time to time been established; and there are many that, in their charges for interment, and Minister's fee, meet the circumstances of the poorer classes of society. The efforts of their Proprietors to provide burial accommodation—if honestly intended and conscientiously performed—would deserve and merit commendation.

One of the grounds of my complaint is, that in many instances, under a guise of affected sanctity, and a show of *external decency* and professed security, bitter sport has been made of human feelings and sympathies—that shameful indignities have been inflicted upon the bodies of the dead—that monstrous, inconceivable frauds have been perpetrated upon the living.

These positions I have been compelled to occupy: be assured, Sir, I will maintain them. I ask your readers to allow me the choice of my own time for the exposition, and I pledge myself that it shall be *full and overwhelming*.

Many concurring circumstances contribute to determine the choice of locality for the interment of deceased relatives and friends. Among the poorer classes, and those above the condition of absolute poverty, the distance of the burying-place from their dwellings, and the consequent expense of transit, has considerable influence in determining the selection. The poor generally have an insurmountable objection to bury their friends at the "parish expense:" they make great efforts to avoid such necessity. Double burial-fees are very frequently imposed upon extra-parochial dead. Applications are constantly made for what are called the "half-dues" (the churchwardens' fees) to be remitted. Sometimes many unfeeling and unnecessary inquiries are made, as to the condition in life of the applicant or of the deceased—his or their pecuniary means, &c. &c. The man who will not, or who cannot, solicit a favour, finds, however, upon inquiry, that he can bury the body of a relative or his friend in a private ground or vault, for the amount yet remaining after the deduction of the "half-dues," and in some instances for a smaller sum; the questions, perhaps unnecessary, are unasked, he is civilly thanked for his patronage, and a *douceur* is even given to the undertaker by the Manager of the ground. Thus the decreased charge for burial in many Private Grounds, as compared with those of the Church Establishment, and the fewer hindrances thrown in the way of survivors by the Proprietors and Managers of some of these receptacles, have occasioned an immense influx of funerals to many of them. Other causes, which may be readily divined, have hitherto determined many very worthy and estimable individuals to desire a last resting-place for their deceased friends or themselves *in, or under, or near* the CHURCH or CHAPEL within the walls of which they worshipped during life. The desire to mingle one's dust with that of those whom we loved during life, and who "are but gone before us," springs from the best feelings of the heart, and ought not to be lightly interfered with.

About 12-13ths of every dead body must dissipate, and either mix with the earth or pass off in a gaseous form. Hence the corruption of the atmosphere in London can frequently be detected by the sense of smell. This I would term, connected as it is with our subject, a *specific deterioration*—a corruption the more offensive and disgusting, as it is the elimination of dead mens' products into the air we breathe, which must enter into the lungs and *corrupt the blood of the living*. Sir, this ought not to be permitted. Yet there are men who have unblushingly attempted to justify and to perpetuate such a state of things.

If I had not irrefragable proofs of the facts—and I would not venture to state them upon other observations than my own—I could scarcely believe, that cupidity, and insolent defiance of the first principles of common sense, went so surely, and so certainly in company, in grave-yard "management." Your readers will scarcely believe that in many burial-places *thousands* of bodies have been said to be deposited, where *hundreds* only could have found space—that the most shocking mutilations and displacement have been commonly practised—that "coffin-wood" has been consumed in furnaces in or near burying grounds—that it has been employed as daily fuel—and that tons weight have been so disposed of in the flues of ordinary chimneys, and of churches and chapels—that graves bought in perpetuity have been broken in upon, and their tenants mangled and displaced.

Sir, there are individuals whose system of "management" extends yet further —

who have unfitted themselves by their abominable practices to be members of a civilised community—but who, nevertheless, are considered, in the common acceptation of the term, respectable.

It has with me long been matter of deep regret that the ministers of religion, who are, from their opportunities and position in society, so well calculated to head a reform of so important a character as this, should have depended upon the statements of others rather than upon their own examination. This, however, has been done, as may be readily proved by a perusal of the evidence given before the Select Committee on this subject. Thus the evidence of the Rev. J. E. Tyler, Rector of St. Giles's Church, at page 76, answer 1463, is calculated to throw discredit upon the testimony of others, from the positive and decided contradiction given to certain statements made before the members of the Committee. The reverend gentleman, in speaking of the practices pursued by two men, who are called grave-diggers, in this churchyard (they ought to be termed grave desecrators), says, in answer to a question from Lord Mahon (1463), that a "very respectable person of the name of Andrews, one of the most employed of all the undertakers, declared he had never seen anything of the sort; no indecency, nothing improper, and no removal of any body or any coffin. The same sort of attack had been made seven years before, and there was another last year, under the signature of 'Anti-Pestilence.' It was a mixture of history, facts, and deductions, *all of which were equally false.*"

In answer to question 1477, from Lord Mahon, asking the witness if he had any observation to make with reference to the remarks of Pennant, in his account of London, in page 157:—["I have," says Pennant, "in the churchyard of St. Giles's, seen with horror a great square pit, with many rows of coffins piled one upon the other, all exposed to sight and smell; some of the piles were incomplete, expecting the mortality of the night. I turned away disgusted at the view, and scandalised at the want of police, which so little regards the health of the living as to permit so many putrid corpses, tacked between some slight boards, dispersing their dangerous effluvia over the capital to remain unburied?"] Answer—"What took place in Pennant's time I have no means of ascertaining, but a total change had taken place, I believe, long before I came to London."

"Sir William Clay, 1506.—You do not know in what period of time, on the average rate of burying in the old churchyard, the ground would be again occupied?—No; but I have been in the habit of asking, 'If we go on at this rate, will not the ground be soon full?' and I have been answered, 'No, the ground will never be full.'"*

Sir, the question and the reply are equally remarkable and important. I leave them to the consideration of your readers. *Pennant's* History of London was published in the year 1790, his complaint, urged with so much force, and, I doubt not, with so much truth; against the practices employed in the churchyard of "St. Giles" *then*, applies with equal force to the cemetery belonging to the parish, at Camden Town *now*. Some months since I visited this place. An open pit dug under the wall, dividing the cemetery from the workhouse, was full nearly up to the surface with pauper bodies; the buzzing of myriads of flies in and over this pit might be heard at a considerable distance from its mouth. With Pennant "I turned away disgusted at the view."

A short distance from this pit I found projecting into four open *private* graves four coffins, the tops of which were not more than 9 inches from the surface. "Yet," says the Rev. Mr. Tyler, "a clergyman lives there, who is the sexton, and who takes a great interest in it, and makes it as acceptable as he can. I have considered all his arrangements very judicious."—Answer 1543.

On the 16th of July, 1842, passing St. Giles's churchyard in company with my friend, Dr. E. Johnson, at a quarter to 5 o'clock, p.m., we noticed a grave-digger at work on the south-east side of the church, and about 10 yards from the corner thereof. A large mound of *dark* earth was being thrown up from a grave which he was employed in making. My friend and I distinctly saw four entire sides of "grown" coffins brought up; portions of coffin wood recently shivered

* Some 200 years since the churchyard of St. Giles-in-the-Fields was first employed as a burial-place. The parish of St. Giles, at that period, did not contain more than 2,000 souls. The census of 1821 gives the population of the united parishes of St. George's Bloomsbury, and St. Giles-in-the-Fields, at 51,793. In the former case, the mortality being at the rate of 3 per cent. per annum, *sixty bodies* would be *annually buried*—in the latter, *one thousand five hundred and fifty-four bodies* would require graves every year.

were constantly thrown up during the 10 minutes we remained; a large wheelbarrow was heaped up with this coffin-wood and taken away; two plates were detached from coffin lids, doubled up by the hand of the grave-digger, and driven into the earth by the heel of his shoe. Several handles of coffins were taken away by the same man. This person the reverend gentleman has "every reason to believe has obeyed the orders he has had given him with regard to any effluvia escaping;" and further, "there are three schools, the windows of which open into the churchyard, and we all think it a great advantage to have that free circulation of air; we have never in any one instance found any effluvia from the churchyard, *it is a decidedly healthy spot.*"*

In opposition to this evidence I will conclude by the following references:—In a discourse preached by the Venerable Hugh Latimer, ex-Bishop of Worcester, in Lincolnshire, in the year 1552, the following passage occurs:—"The citizens of Naim had their burying-places without the city, which, no doubt, is a laudable thing; and I do marvel that London, being so great a city, hath not a burial-place without, for no doubt it is an unwholesome thing to bury within the city, especially at such a time, when there be great sicknesses, and many die together. I think, verily, that many a man taketh his death in St. Paul's Church-Yard, and this I speak of experience; for I myself, when I have been there on some mornings to hear the sermons, have felt such an ill-savoured, unwholesome savour, that I was the worse for it a great while after; and I think no less but it is the occasion of great sickness and disease."

A great and good man, the late Dr. Adam Clarke, whose testimony ought to have considerable influence, and which conveys a severe censure upon certain persons who sanction and attempt to justify practices which he, a Christian minister, and a highly valuable member of society, unhesitatingly condemned, remarks in his Commentary on the raising from the dead the widow's son, in the city of Naim, Luke vii. v. 12-15, that "the Jews always buried their dead without the city, except those of the family of David. No burying-places should be tolerated within cities or towns, much less in or about churches and chapels. *This custom is excessively injurious to the inhabitants, and especially to those who frequent public worship in such CHAPELS and CHURCHES. God, decency, and health, forbid this shocking abomination.*

"On the impropriety of burying in towns, churches and chapels, take the following testimonies:—*Extra urbem soliti sunt alii mortuos sepelire: Nos Christiani, eos non in urbes solum, sed et in TEMPLA recepimus, quo fit ut multi factore nimis, ferè exanimetur.*"—*Schœttgen.* Others were accustomed to bury their dead *without* the city: We Christians, not only bury them within our cities, but receive them even into our churches! Hence many nearly lose their lives through the noxious effluvia.' Both the Jews and other people had their burying-places without the city:—*Et certe ita postulat ratio publicæ sanitatis, quæ multum lædi solet aura sepulchrorum: and this the health of the public requires, which is greatly injured by the effluvia from graves.*"—*Rosenmüller.*"

The Reverend Doctor thus concludes:—

"From long observation, I can attest that CHURCHES and CHAPELS situated in Grave-yards, and those especially within whose walls the dead are interred, are perfectly unwholesome; and many, by attending such places, are shortening their passage to the house appointed for the living. What increases the iniquity of this abominable and deadly work is, that the burying-grounds attached to many Churches and Chapels are made a source of PRIVATE GAIN. The whole of this preposterous conduct is as indecorous and unhealthy as it is profane. Every man should know, that the gas which is disengaged from putrid flesh, and particularly from a human body, is not only unfriendly to, but destructive of, animal life. Superstition first introduced a practice which self-interest and covetousness continue to maintain."

I have the honour to be, Sir,
Your most obedient servant,

GEORGE ALFRED WALKER.

London, November, 1842.

* Vide Evidence p. 75, answer 1448.

LETTER V.

[From the Morning Herald, December 12.]

SIR,—Those of your readers who have perused the communications you have done me the honour of inserting in your journal, will be prepared for much I shall advance in the present. One cause—if not the greatest—of atmospheric impurity in large towns, will be found in the system of interment generally practised. Grave after grave is dug in soil frequently so overcharged with putrescent animal matter, that it is impossible to prevent the corruption of the atmosphere from the exhalations unavoidably arising (more especially during the warm season) from the frequent up-turning of the earth. In many instances bodies are placed one above another, and side by side, until the accumulated masses of corruption have reached a depth of 25 or 30 feet, the topmost coffins being but a few inches from the surface. The condition of the majority of the grave-yards and burying-places in London has been such, for many years, that they have not been capable of receiving the annual mortality. There is scarcely a single grave-yard, vault, or receptacle for the dead, in London, that is not overcharged. The burial-places of the metropolis and of the provinces have been under no superintendence; public bodies or private individuals have been at liberty to allot grounds or to choose depositories for the reception of the dead, without limitation as to number, without control as to locality, or the disposal of the charge with which they were entrusted; and it has been proved that individuals have availed themselves, to an alarming and most injurious extent, of the ignorance or poverty of survivors. In certain localities the most shameful practices are pursued by individuals, who (in the absence of peremptory legal enactments to the contrary) mutilate and displace bodies in various stages of decomposition, to the certain deterioration and destruction of the health of the living; and it is worthy, Sir, the serious attention of your readers, that these acts are perpetrated principally in burying-places in densely populated districts—neighbourhoods, indeed, in which the filthy, ill-ventilated, condition of the streets and houses is such, that any additional causes of the corruption of the atmosphere should not be permitted to exist.

If I can demonstrate that the dead, as at present disposed of, are sources of disease and death to the inhabitants of the cities and towns of the empire—if many of our grave-yards have been crowded to an extent that would be absolutely astounding and incredible if it were not proved to exist, the question arises—What must be done? The answer, involving some deeply-important considerations, is brief. The necessity for active, persevering, and determined exertions being admitted, investigation and inquiry will elicit further facts. The most sceptical will be convinced of the dangers incurred by themselves and the public, more especially during the warm season, from grave-yard emanations. The slightest reflection will convince them, that enormous magazines of ANIMAL malaria are day and night in operation, and constantly diffusing their injurious products; and that this MALARIA is produced by hundreds of thousands of bodies, in every stage of decomposition, which have been, and continue to be, deposited in places situated in the midst of human dwellings, whilst in some localities the LIVING sleep within a few inches of the DEAD.

I concluded my last letter with two most powerful testimonies against such practices. The evidence of the late Dr. Adam Clarke is particularly valuable, on account of the unflinching contrast it presents to the pseudo-philanthropic, but really-*interested*, conduct of certain individuals, the supporters of the existing system. I recommend to every wavering but well-intentioned person yet unconvinced, a perusal of the Rev. Dr. Clarke's words. If the evidence of a clerical witness does not remove their scepticism, I shall produce lay testimony, that I am sure will force conviction upon the mind of every honest and disinterested individual. In what strong, what energetic, language the Rev. Doctor expresses the intensity of his disgust at "*the iniquity of the abominable and deadly work!*"

Acquainted as he was with the *results*, how would he have comprehended the *means* employed? What would the good, the honest, man have thought of the answer to the question 1665—"Were you in the habit of performing this grave-digging without the use of spirits?—*No; we were obliged to be half groggy to do it, and we cheered one another, and sung to one another!*" 1685. "What quantity of spirits do

you take before you begin this work?—*A quartern of gin, and a pot of beer, and a pipe of tobacco, and then my blood begins to flow.*" This man has seen an old sexton up to his knees in "slush and bloody matter." Mr. Mackinnon, 1689, asks—"Did you not feel rather awkward at this kind of work at the beginning?—Yes; I used to stand and tremble; I could not stomach it at all." Poor wretch! during his brutal endeavours to deface God's own image, he was within a few yards of the CHAPEL in which the living worshippers met. He might not enter there—he was no fit company for those who were hearing of a better world—of an eternal future; the horrible present was too real for him; he was the degraded instrument of unchecked, reckless, determined avarice—a vice disgusting under all circumstances, but infinitely above comparison, more disgusting and injurious in its consequences, when it fastens upon dead victims, and erects its altar in a rank, overgorged grave-yard.* Let not your readers, Sir, imagine that the above picture is an unreal one. Your London grave-digger is not a whit better than the defunct resurrectionist—they are twin brothers. He is a person *sui generis*; his habits, his occupation, unfit him to be other than what he is, too frequently—a reckless abandoned, bad man, made so by the force of circumstances. With scarcely an exception, they are drinking men; not always by choice—frequently from necessity. Stimulation is temporary strength, and temporary strength thus procured is too often needed in the execution of their disgusting work.

If there are men who, on the "winking of authority," will break within the house of death, what will the respectable, the thinking, part of the community say to the fact, that in the majority of instances, such practices, and infinitely worse, must be resorted to in many receptacles for the dead; and that there is too much reason to believe that those who ought to know better than to originate the necessity for the employment of such means, have "winked" at the brutal readiness of their depraved agents, and tacitly sanctioned the frequent, almost daily, repetition of practices at which humanity shudders, and which religion should indignantly repudiate? Those who desire further proofs of these allegations will find an abundance of them in the "Report of the Select Committee on Health of Towns†."

At the risk of tiring the patience, or of offending the sensibilities, of your readers, I will further illustrate this division of my subject. On the 20th February, 1839, a vestry meeting was holden for the purpose of considering the propriety of *re-opening* the Poor-Ground belonging to St. Saviour's Parish, generally known as the Cross-bones Burying-Ground. The ground had been closed about two years—the time generally allowed for the *destruction of the bodies!* and it was moved, "that it be re-opened;" the mover of the resolution stating, that in consequence of the aversion generally manifested to bury in what is named the "Irish Corner," many bodies were taken out of the parish to be buried. *This corner, however, had been cleared, and room made for about a thousand bodies.* One gentleman argued, that "if the graves had been made deeper, hundreds more corpses might have been buried there." Another admitted, that it really was too bad to bury, within 18 inches of the surface, in such a crowded neighbourhood; and it was even hinted that "the clearing," viz., "the digging up, and the removal of the decayed (?) fragments of flesh and bones, with the pieces of coffin, &c., would be the best course, were it not for the additional expense." The funds of the vestry, and the HEALTH of the living, were here placed in opposite scales; the former had the preponderance. In this immediate locality is a most disgusting grave-yard and receptacle for the dead, in Ewer-street, called Ewer-street Chapel. Whether the street be in a sufficiently filthy condition on the surface, to warrant the minister and proprietary of the grave-yard and so-called vaults in making further use of its filthy capabilities, I know not; but it is a fact, that the greatest freedoms have been taken where they were least likely to be resented. Dead men tell no tales. Many of your readers, Sir, may have noticed a chapel in the London-road, now called St. John's Episcopal Chapel. This place, some years since, had a burying-ground attached to it; indeed, the chapel stood in the grave-yard. The chapel

* This grave yard contains (exterior measurement) 28,756 superficial feet, and would receive 899 adult bodies. The chapel stands in the grave-yard, and has a receptacle underneath for dead bodies. The burying-ground was "opened in the year 1820, and has received (?) nine thousand five hundred bodies."—Vide Evidence, p. 116, answers 2140 42.

The proprietor (Mr. Tagg, an undertaker) "considers that not one-half of the ground is now occupied." 111—Answer 2148. When will it be QUITE full?

† Health of Towns (effects of interment of bodies), June, 1842. Hansard and Co.

passed into other hands; the surcharged grave-yard was sold. Two houses were built upon its site some 12 years since, but in consequence of the rotten state of the foundations, the houses gave way. The fronts were cracked and fissured longitudinally and transversely; and there is no doubt that, but for the lateral support afforded by the chapel on one side, and the dwelling-houses on the other, the houses would have fallen down years ago. The foundations sank almost immediately after they were built, and although frequent repairs were made after their erection, it became necessary that they should be taken down. Accordingly piles were driven through all opposing obstacles, for the purpose of obtaining a secure foundation, and the present houses were built a few months since. What passer-by would dream, that under the floors of those houses there are probably a great number of Christian dead, who have been subjected to the transfixing process of pile-driving, and consequently to greater indignities than the ordinary felon?

Formerly on the north side of the grave-yard in Drury-lane, belonging to the parish of St. Martin-in-the-Fields, were boarded sunk areas, giving a borrowed light and air to five houses, the property of his Grace the late Duke of Bedford. This burying-ground was originally *below* the surrounding level; now it is at least 5 feet *above* the street. This elevation has been gained by packing bodies *stratum super stratum*, until long since it has been impossible to obtain a grave without previous disturbance and mutilation.* In a very recent instance the searcher was repeatedly employed. An old inhabitant well remembers that the areas of which I have spoken were made in self defence—to prevent the obstruction of light, which was gradually encroached upon—and also to hinder the coffins falling through the ground-floor windows. The above areas projected on an average 3 feet 6 inches into the “grave-yard,” and were about 4 feet in depth. Since the removal of the boards, and the substitution of a brick wall, 2 feet have been gained in the entire length and height of the ground; and the areas have been sunk to a depth varying from 8 to 16 feet. Thus has a little more space been gained to deposit fresh centres of infection for the living, by the most unjustifiable disturbance and mutilation of the dead!

The compound of human flesh—bones—tissues and earth, removed in sinking these areas, and digging a foundation for the wall, it was intended to cart away. Some loads were removed, and others already deposited in the street would have followed, but they were noticed by the passers-by. An outcry was raised—one person more determined than the rest, sought out the authorities of the parish, and insisted that a stop should be put to such practices. The material deposited in the street was again “wheeled back in barrows,” and with the succeeding masses of earth excavated, spread over the surface of this grave-yard, which was raised considerably in its entire surface by this means. The stench arising from the disturbance of the great number of bodies, and the throwing up of the successive portions of soil, was so abominable that the men employed refused to continue the work; they were allowed, however, a large quantity of “gin and porter,” as an encouragement to proceed; 1*l.* 9*s.* was paid for drink during one week by the employer of the men who executed this work, they were on several occasions seen intoxicated. The neighbours were so much annoyed by one of the consequences resulting from this desecration, that the contractor caused many bushels of quick lime to be spread over the surface of the grave-yard.

A new “bone hole” was made about the same period. Four men were employed during 8 or 10 days in removing the bones from the old receptacle into the new. One of the grave-diggers amused himself by noting with chalk the number of skulls which were displaced (upwards of 500) in one day. I find in the churchwardens’ account with the parishioners of St. Martin-in-the-Fields, in the year

* In the year 1525, the parish of “St. Martin” was, as its name implies, “in the Fields.” In the above year, THIRTEEN BODIES were buried in the parish. In 1526, FOURTEEN were buried. In 1527, TWENTY-TWO were buried. In 1528, THIRTEEN were buried. The examination of the sextons’ books, commenced in the year 1691, would, as tending to elucidate my subject, be both interesting and important. The burial-ground of this parish, situated on the western side of Drury Lane, contains 10,080 superficial feet. Within a period of *ten years* 315 *adult* bodies, and no more, might have been buried there, or at the rate of 32 per annum! By an official return it appears, that *in one year*, 565 bodies were disposed of between the above named burial-ground (!), the one at Camden Town, and the vaults under St. Martin’s Church. There is little room for doubt, that on an average *three hundred and fifteen bodies*, instead of *thirty-two*, have been interred yearly in the burying-ground in Drury Lane.

The celebrated Bunhill Fields, City Road, was originally opened as a burying-place in the year 1665. It contains about seven acres. It is supposed that considerably upwards of one hundred thousand interments have taken place in this ground, and that one million of pounds sterling have been derived in fees, &c., from the burial of the dead. Among other celebrated characters, it contains the ashes of the Rev. John Bunyan, author of the “Pilgrim’s Progress.”

1840-41, the following items, under the head of "Repairs to Drury-lane Burial Ground:"—

By cash paid, new vaults for depositing bones.....	£24	14	6
Labourers, digging new vaults, and levelling the ground	34	3	1
Incidental expenses connected with the above alterations	18	10	3
Total.....	£77	7	10

Thus an expense was incurred which would have *purchased* a piece of ground much better adapted for the purposes of burial, of nearly four times the extent of the above grave-yard. So much for the *pecuniary policy* of parish management!

M. Parent Du Chatelet relates the particulars of the removal of 43 bodies, victims of the "three days," in a state of advanced putrefaction, from the vaults of the church of St. Eustache, Paris. The 43 bodies were removed in 2½ hours, by 23 men and 12 carts, *without any accident*. The task was superintended by M. Labarraque. *Every precaution was taken*; solutions of chlorine were used in considerable quantities; and the bodies had, it appears, been originally covered with quick lime. Parent Du Chatelet declared that the success of the measure did Labarraque great honour, and that it would be registered, "*dans les fastes de l'hygiène publique.*"—(*Lancet*, December 7, 1839.) In London, Sir, no such fuss would have been made; a scientific means of disinfection most probably would not have been employed; no well-deserved compliment would have been given to the preserver of the "*Hygiène Publique.*" Our grave-diggers would have had on such an occasion an extra quantity of drink; a slight increase of the mortality *might* have occurred; a sudden death or two *have* happened, and the hackneyed and much-abused verdict, "Died by the visitation of God," would have been returned.

I have the honour to be, Sir,
Your most obedient servant,

GEORGE ALFRED WALKER.

London, Nov. 25, 1842.

LETTER VI.

[From the *Morning Herald*, December 20.]

SIR,—In my previous letters I have exposed some of the more glaring of the abominations practised in many of the so-called sanctuaries of the dead. I have demonstrated, by reference to numerical and statistical facts, that the existing places of interment are totally inadequate to the decent disposal of the annual mortality; that the sanctity of the tomb, the kindest sympathies of our nature, are constantly violated and insulted; that the natural, almost the instinctive, reverence and respect with which all, even the most profligate and hardened, must ever feel for the remains of departed kindred and friends, must be, and frequently are sacrificed, with the most ruthless and savage barbarism, at the shrine and altar of the god Mammon.

I now pass from a necessarily brief examination of the system itself, to its effects on the health of the population of the surrounding districts. The influence of decomposing animal matter, as a cause and generator of disease, is now so universally recognised by the better-informed members of the medical profession, that *they* will scarcely need further proofs of its deleterious nature and properties. But inasmuch as the majority of non-professional readers are perhaps quite unaware of the serious injury which the health of our population suffers from this cause, I shall now adduce such testimony, mainly the result of my own personal observation, inquiry, and experience, as cannot fail to convince the most sceptical of the pernicious effects of the present system of intra-mural interment.

The atmosphere which we breathe is composed of 79 parts, by volume, of nitrogen, and 21 parts of oxygen, with a proportion of carbonic acid varying from 4 to 7 parts by volume in 10,000. Experience has incontrovertibly proved, that any considerable deviation from this its normal or proper constitution, is incompatible with the due and healthy performance of the functions of animal life. Any sensible addition of other gases, although they may be quite inert and harmless in their nature, has invariably been found to disturb the integrity of the respiratory and the digestive processes. If such gases, also, possess pernicious and poisonous qualities,

of course the injury to the vital functions must necessarily be proportionably greater.

Are, then, the gases evolved from the decomposition of human bodies similar—identical in their composition—with the air we breathe, or are they dissimilar; and, if dissimilar, are they harmless in their nature, or deleterious? The disgusting and offensive smell teaches us that something in addition to the usual components of the atmosphere is present. The facts which I shall adduce, elucidating their effects on the animal economy, apart from their known chemical constitution and properties, will most clearly and incontestibly prove, that *these gases are by no means innocuous*, but on the contrary, *powerfully and virulently poisonous*. The proximate principles, or the constituents of which our frame is composed, are for the most part exceedingly complex as regards their elementary composition. They are formed in the grand laboratory of nature. The most skilful chemists have never hitherto succeeded in producing them by art. They were originally generated, and their integrity is constantly preserved by a mysterious something, which we denominate the vital principle, or life. When this conservative power is wanting, when life ceases, they fall under the dominion of the immutable, the general, laws governing inorganic matter, resolve themselves into simpler compounds, and are arranged, usually, according to their chemical affinities. The compounds generated are for the most part gaseous substances, viz., sulphuretted, carburetted, and phosphuretted hydrogen, ammonia and its hydro-sulphuret, carbonic acid, and sometimes nitrogen and hydrogen, holding a considerable quantity of a peculiar volatile fatty matter in suspension, or solution. Some of these gases when respired are known, and have repeatedly been proved, to produce disease, and even death.

The greatest obstacle in the way of the honest and anxious inquirer after truth, is the difficulty of collecting sound data. The causes of disease are frequently as mysterious as the sources of life; direct evidence is too often wanting. Thus for centuries past we have been disputing whether certain diseases are contagious or non-contagious, almost forgetting that compared with the investigation of their origin, that of their transmission is comparatively unimportant. It is true, that so far as we are acquainted with the subject, we are generally unable to collect other than presumptive evidence; but, when the presumptions are founded in so much probability, and the facts from which we deduce them are of so frequent occurrence, the effects so constantly and so surely following the apparent cause, we cannot do otherwise than reason upon and decide from the evidence we possess, imputing the absence of more direct testimony not to its non-existence, but to the want of a sufficient observation in those who, instead of being carried away by the judgment of other men, have exercised their own, in watching the operations of Nature, and in attending to the silent, but not less certain, warning which she gives to those who infringe even the most minute of her laws.

The page of history is studded with instances of individual and national suffering which, if not always *clearly* traceable to the neglect of certain principles, may yet, in the absence of more direct evidence, serve to remind us of the past as cautions for the future. If we give two persons a dose of a deleterious substance, and it produces death in both, we have *direct* evidence that it is a poison; but if two persons are exposed to a vitiated atmosphere, and illness be produced in the one and not in the other, we have *presumptive* evidence only that the atmosphere acts as an agent in the production of such disease. This kind of proof becomes, of course, stronger, and approaches more nearly to the nature of direct evidence, as the proportion attacked in a given number is larger, supposing the intensity of the poison to be the same in each case. Thus, if ten persons out of a hundred be attacked after being exposed to the same causes of disease, the evidence is stronger than if five only suffered. If the proportion be twenty, the evidence is yet stronger; if thirty, stronger still; and so until what was before *presumptive*, becomes *direct*, evidence, the one merging into the other as the number attacked becomes greater.

But there are a multitude of accidental circumstances which preclude the possibility of direct evidence of this kind ever being obtained in our investigations into the remote causes of disease—as for instance idiosyncracies, or natural and inexplicable peculiarities of constitution, varying states of mind or body, and last, though not least, atmospheric influences. There are individuals who enjoy a complete immunity from diseases of the endemic or epidemic class, who, however much exposed to disease in its most intense form, yet escape uninjured, and who would be alike safe amid the milder epidemics of England and the fearful desolation of the plague. Who does not know that a man in perfect health is less liable to contagion than one

who is not so blessed, and that hope or fear, happiness or misery, with its consequent excitation or depression, give exemption from, or liability to, disease, according as the one or the other state is predominant?

Reasoning upon these data, we come to the conclusion that the evidence as to the effect of the mephitic odours of the grave-yard is and must be presumptive, and that until by the progress of science we can exhibit an aerial poison in a separate and distinct state, and find that like the metallic poison, arsenic, it will produce death in all, when taken into the circulation in the same manner (whether by the lungs, skin, or stomach), such indirect evidence must suffice. It is clear that every case of disease should, if possible, be traced to the presumptive cause; and the cause, if possible, removed. This is a highly valuable mode of analysis; for if a specific, or other disease, cease altogether, or re-appear at longer intervals of time, it will prove the truth of the position now advanced, and stimulate to increased energy and exertion: if the contrary be the case, we shall cease to act upon false suppositions, and have still to search for the truth. Our duty then is to register every case of disease referrible to a presumptive cause, and show what that cause is.

For the support of his mere animal existence, man requires but three necessities—pure air, good food, and sufficient clothing; it is the duty of those who are placed in positions to do so, to take care, at least as far as legislation can operate, that the acts and processes of civilised society shall, by additions to its chemical composition, deteriorate the atmosphere as little as possible. If impure emanations into the atmosphere are prevented, its composition near the earth's surface is fitted for the support of animal life. The respiration of pure air is so necessary to the well-being of animals, that any decided corruption of that first and last food of existence leads to deterioration of health, to consequent disease, premature, and even sudden death. So long as impure exhalations proceed not to a *sensible* alteration of its chemical composition—individual existence is so far secure that it is not *suddenly* endangered. Peculiar conditions of the earth's surface, sudden changes in the weather, variations of climate, produce temporary changes in the air we breathe.

Any deviation from, or rather addition to, the composition of the atmosphere, then, although seldom sufficient to produce immediate disease or sudden death, is yet injurious to health. This seems to have been understood in the time of our quaint old chronicler, Stowe, I commend his remarks to the serious attention of all:—

“It was observed also [says he] whether London be so obnoxious to the plague as it hath been in former time. London hath been multiplied two parts in three in 80 years, and the more populous the more infectious. Whence it might seem to follow that the City were more subject to pestilential malignities now than in times past; yet experience assurcth us of the contrary, and reason seconds experience. For first, though the steams, stenches, and fumes, are now grosser than formerly by reason of the increase of houses (which makes it in some respects more unhealthful, especially since the burning of sea coals), yet keeping the air from being so liable to foreign impressions as formerly, these fumes and steams, especially of sea coal, so thicken the air that it standeth out against most foreign influences. Secondly, though the City be increased, and that by turning noblemen's houses to tenements, yet the increase is removed to more open and free air, and the trade removed from the dirty and narrow places in Cannon-street and Watling-street, to St. Paul's, Ludgate, and Fleet-street; from Billingsgate-street and Fenchurch-street to the Strand, avoiding those places that were crammed with old and dark houses and buildings, and inhabiting more new and lightsome ones nearer and nearer to White-hall, situated in a more convenient and healthful air. And lastly, it was observed that the contagion of the pestilence depended more on the disposition of the air than upon the effluvia of men's bodies; a truth made manifest by the sudden increase of it in 1636 from 118 one week, to 927 in the next, and from the sudden decrease from 990 in one week to 258 the next, and then again to 852—alterations certainly to be attributed more rather to the change of air than to the constitution of men's bodies.”—*Stowe's Survey*, b. 5, p. 449.

I have the honour to be, Sir,

Your most obedient servant,

GEORGE ALFRED WALKER.

December, 1842.

LETTER VII.

[From the Morning Herald, December 28, 1842.]

SIR,—On the subject of burying-grounds, and the poisonous effluvia arising from dead bodies, no better authority can be cited than Fourcroy. Appointed by the French Government to superintend the exhumation of a vast number of bodies, the mortality of centuries, interred in the then burying-ground, (now the site of the *Marchè des Innocents*) Paris, he says—“ We had a strong desire to satisfy ourselves, by experiment, what was the nature of the destructive air given off from decaying bodies. In vain we attempted to induce the grave-diggers to procure us an examination of this elastic fluid in other burying-grounds,—*they uniformly refused*,—declaring that it was only by an unlucky accident they interfered with dead bodies in that dangerous state. The horrible odour and the poisonous activity of this fluid announce to us, that if it is mingled, as there is no reason to doubt, with hydrogenous and azotic gas, holding sulphur and phosphorus in solution, ordinary and known products of putrefaction, it may contain also another deleterious vapour, whose nature has hitherto escaped philosophical research, while its terrible action upon life is too strikingly evinced. Perhaps it belongs to another order of bodies, to a substance more attenuated and fugacious than the bases of the known elastic fluids; and that in this view the constituent matter of this gas operates. May it not be credited, that to this septic miasma is owing the diseases to which persons are exposed who live in the neighbourhood of burying-grounds, sewers, and, in short, all places where animal substances, in heaps, undergo spontaneous decomposition? *May we not be permitted to suppose that a poison so terrible as to cause the sudden extinction of animal life, when it escapes pure and concentrated from its focus, or place of production, may, when received and diluted in the atmosphere, retain activity enough to produce on the nervous and sensible solids of animals, an operation capable of benumbing their functions and deranging their motions?* Since we have witnessed the terror which this dangerous poison excites among the labourers in cemeteries—since we have seen in a great number of them a paleness of face, and all the symptoms of a slow poison, *it would be more unsafe to deny the effects of these exhalations upon the neighbouring inhabitants*, than to multiply and exaggerate complaints, as has been done, by an abusive application of the discoveries by physics upon air and other elastic fluids.” One can scarcely credit that any person can be so ignorant or so unprincipled, as to assert that the PUBLIC HEALTH suffers no injury from the existence of places from which immense volumes of these poisonous gases are constantly in process of evolution, and that too in localities where the compactness and the immense number of the living population must alone tend considerably to diminish the quantity of the *pabulum vitæ*, the element indispensable for existence—the oxygen of the atmosphere. In large towns, and among a compact population, as in London, where the daily expenditure of nervous and muscular energy of the majority of its inhabitants is so constant and so excessive—where with the professional, the literary man, the artizan, and the various classes of a most industrious and hardly worked community (more especially in crowded busy neighbourhoods), the toe of the night treads on the heel of the morrow, and the toil of the day is scarcely permitted to be forgotten in the repose of the night—how important is it to themselves, their relations or dependants, and the society of which they are units, that during the periods when their *power of resistance* against malarious influence is weakened by sleep, the atmosphere they are insensibly breathing should be in as pure a condition, or, in other words, as free from mechanical admixture, as possible! * How important is it, I repeat, that present legislation should retrieve the errors of the past. A superior education, and pecuniary means, enable the higher classes of society to locate themselves beyond the reach (at least they think so) of malarious influence. The principle is a selfish one—the practice even more than doubtful. May they be warned in time! They have never, as yet, roused themselves from their dangerous dreaming, until

* The thousands who in their daily avocations thread the sinuosities of the surface of London—dotted as it is with hundreds of overcharged, and consequently insecure, burial-places—in many of which practices are—must—be pursued, that sink the MAN immeasurably below the BRUTE—might reasonably ask themselves the question: How has it come to pass, by what gradual, yet inevitable, process of deterioration has it happened, that men can be found employers, or employed as actors, in such scenes? By what consentaneous permission is it that such an heterogeneous compound of stuff, called air, largely impregnated, as I shall further prove in my next letter, with emanations from dead bodies, should continue to be complacently—contentedly—breathed by governors and governed; and how much longer will certain persons be permitted to carry on their INFAMOUS “management?”

the shadows, generally dimly outlined in the distance, have stridden as the destroying angel over their own thresholds. In districts where the *foci* of malaria are most numerous—where the emanations from decomposing animal matter are most abundantly developed (whether such emanations arise from grave-yards, and other receptacles for the dead, or sewers, it matters little, the gases evolved in both cases being identical in chemical composition), will typhus fever, and other diseases evidencing depression of the vital powers, be found to be almost constantly present, or lurking in a slumbering undeveloped form. The experience of Insurance Offices and Benefit Societies had long since shown that, *ceteris paribus*, in these localities the mean average duration of life is infinitely lower than in other situations where such exciting causes of disease are not present. “So certain am I [says Dr. Armstrong] of the truth of the doctrine of *malaria*, and a local taint or contamination of air, that I believe with the aid of the legislature I could go far to annihilate typhus fever in the British metropolis.” “By proper care such epidemics as typhus, scarlet fever, are now scarcely known as affecting large groups in the army, and such an occurrence would denote to the chiefs of the Army Medical Board the existence of some great neglect into which it would be necessary to make inquiry.”—[Sanitary Report of Poor Law Commissioners to her Majesty’s Secretary of State for the Home Department, July, 1842, p. 222.]

If the gases eliminated from the decomposition of the dead be respired in a concentrated state, instantaneous death may be, and has been, the result; if (and this is of far more frequent occurrence) the poison be considerably diluted with atmospheric air, the injurious effects, though perhaps less clearly traceable, must sooner or later follow. Various affections of the organs of digestion are slowly but surely induced, and disease of the assimilatory processes, we have every reason to believe, is a frequent cause of other serious and fatal disorders. The inhabitants of malarious districts, it may confidently be affirmed, are unable to resist the impression of such noxious agencies as a person in perfect health would have borne with impunity. Changes in the temperature and hygrometric condition of the atmosphere which might, and most probably would, excite in the latter merely a trivial catarrh, are in the former often followed by rapidly fatal consumption; rickets, scrofula, urinary disorders, and all the varied forms of disease dependent on mal-assimilation of the alimentary principles, are unusually rife amongst them, and when any epidemic makes its appearance, the mortality in such localities is in general fearfully great.

It is true that thousands annually brave the contagion of typhus fever, small pox, scarlet fever, &c., and remain uninjured; but would any one venture to affirm that the invisible agencies producing these and other diseases are not in existence, because *they* are unaffected? We hear the unreflecting very commonly make the observation, “Why; Mr. or Mrs. So-and-So, lived in such a locality [perhaps notoriously an unhealthy one] a great many years, and died the other day at a very advanced age.” Persons should recollect that if such examples of longevity do occasionally occur, they are the exceptions, not the rule.

Thus the Rev. Evan James, curate of St. Dunstan’s, Stepney, stated in answer to question 2718, by Sir William Clay, “Do circumstances occur to your recollection connected with burials in your churchyard, which you consider offensive on the ground of public health or decency?—No [said the Rev. gentleman], certainly not; it is not long since I buried a man at Stepney who had been upwards of 70 years the grave-digger; he died in the 103rd year of his age.” How many younger grave-diggers have been cut down prematurely during the probationary period of the older one? How much longer might not the man have lived had he followed a healthier occupation? This case proves that there are individuals obnoxious even to such destructive agencies. As a collateral fact it may be well to state that in the year 1665, the period of “the Great Plague,” in the parish of Stepney alone, 116 sextons, grave-diggers, and carters, employed in removing the dead bodies, were cut off in one year!

I am happy to be able to subjoin the opinion of so deservedly celebrated a physician and chemist as Dr. Prout, in whose work on “Stomach and Urinary Disorders,” (p. 21) I find the following—“Another, and perhaps the most fertile exciting cause of mal-assimilation in general is MALARIA. I have no hesitation in expressing my belief, that almost every form of disease connected with the development by the secondary assimilating process of the various indefinable acid principles, are more frequently excited by MALARIOUS influence than by any other external cause.” In his letter to W. A. Mackinnon, Esq., M.P., Chairman of the Select Committee appointed to inquire into the “effects of interment of bodies,” the learned Doctor says, “there

can be no doubt that *the effects of exhalations* from church-yards on the health of individuals exposed to them, particularly in crowded localities, are *most pernicious*. *I have no hesitation, therefore, in expressing my decided opinion that the interment of the dead among the living should be no longer permitted."*

I have the honour to remain, Sir,

Your most obedient servant,

GEORGE ALFRED WALKER.

December 10, 1842.

LETTER VIII.

[From the *Morning Herald*, January 5, 1843.]

SIR,—I am glad to find that one effect of the publication of this series of letters in your valuable journal has been to cause alarm among a small section of those who profit by the continuance of the practices which it has been my object to denounce and destroy.

The "*Anti-Abolition of Intra-mural Interment Society*," recently established, have, by their COMMITTEE, put forth a pamphlet in defence of the existing system of sepulture. The efforts of their *oblique* "*Bornoyeur*" are worthy of a better object. It is to be regretted that an attempt should be made to defend that which is indefensible. The character and complexion of this advocacy may be judged of from the simple circumstance, that instead of attempting to disprove in detail the FACTS given in evidence before a Committee of the House of Commons, he contents himself with denying their correctness in the gross—a course of proceeding which I need scarcely say is within the reach of any one who is not overburdened with scruples in the application of the terms "fool," "liar," and "libeller," in which this "polite letter-writer" so exuberantly indulges. But, Sir, when I tell you that this advocate of practices which afflict while they disgust—this apologist, nay eulogist, of a system which at once insults the memory of the dead, and saps the healthful existence of the living; when I tell you, Sir, that this individual himself, a so-called minister of the Gospel, has either accepted his office from those "whose praise is profit," or that he is the self-elected champion of enormities at the bare mention of which every good man would indignantly recoil, I am sure you will agree with me, that I ought not to suffer myself to be drawn aside from what I believe to be my duty, by such attempts at controversy as are made by this *Reverend* pamphleteer. To return, therefore, to my subject.

In my former communications, I have briefly and rapidly noticed the system of interment too frequently practised in London. I assert, without fear of contradiction, that in many large towns similar practices are pursued, and the same injurious results must have followed. If the condition of the burial-places in England be such that great moral and physical injury must necessarily be inflicted upon its inhabitants, in Scotland* and in Ireland they are even in a worse state. "I am persuaded [says an indisputable and excellent authority on this subject] that the remains of 130,000 Irish Roman Catholics are annually consigned to the earth unattended by a clergyman. I believe, that in the county of Mayo alone, the number so bereft of Christian burial is not less than 7,000 in each year. Many of the burial-places present spectacles truly revolting. Often have I seen graves turned up by swine, and graveyards unprotected by any enclosure whatever."† It now remains for me, previously to entering upon a recital of cases proving the direct effects of emanations from the dead upon the living, to explain, as clearly as I possibly can, the manner in which gases pass off from the surface of grave-yards, and why it is, that excepting

* The following among many other statements in my possession, proves this allegation:—

"CHURCHYARD DESECRATION AT LEITH —From the over-crowded state of one of the burying grounds in this town, a system has been going on, and is still in active operation, which has aroused a general feeling of indignation among all classes of our townsmen. We allude to the practice of carting the surplus mould to the beach, literally scattering the ashes of our fathers upon the wide world of waters! We understand that from 15 to 20 cart-loads of churchyard earth are weekly deposited in the sea. A few days ago we witnessed pieces of coffins, coffin handles, and other memorials of the grave, strewed about upon the sands, to be washed away with the dust of the dead, by the next returning tide. Time was when the 'narrow house' was indeed a resting-place, but now the sacred ashes of those whom we hold most dear are forbidden the repose of the grave! We trust that this will immediately be put a stop to, and new ground be provided for a receptacle for the dead."—*Scotsman*.

† Letter from Eneas Macdonnell, Esq. to the Editor of the *Times*, Feb. 1, 1841.

in some *localities*, and during a peculiar condition of atmosphere, the smell can seldom be distinguished *during the day*, but may be frequently perceived late at night or early in the morning. I consider it, however, of little practical importance to insist upon the presence or absence of an odorous compound. We have abundant evidence in the mode of propagation of diseases ordinarily considered contagious or infectious, that individuals are poisoned by invisible and frequently non-odorous miasmatic agency.

Many of your readers, whose pursuits compel them to pass by places used for the interment of the dead, may perchance be somewhat sceptical as to the correctness of some of my statements. They may affirm that they have never perceived, by the sense of smell, any effluvia arising from these depositories. This may be readily explained, if the forces tending to diffuse gases through the atmosphere be carefully considered. A grave-yard presents an excellent absorbing surface; its dark colour and its loose texture* affording the conditions most favourable for this process; hence, during day, the superficial stratum of earth freely absorbing the heat emitted from the sun, will have its temperature thereby raised considerably above that of the superincumbent atmosphere. Now as heat is freely communicated from one body to another in contact with it (by conduction), until an equilibrium of temperature be established, the layer or stratum of atmospheric air, lying immediately above or upon the surface of the earth, receives from the latter portions of the solar heat which it had previously absorbed, and, being thus rendered specifically lighter, rises (as a balloon containing air rarefied by heat) to the higher regions of the atmosphere, its place being immediately occupied by another portion of cold air, which in like manner becomes heated and ascends—thus establishing a continued upward current.

The effects of such currents, most powerfully assisted by the diffusibility of the gases eliminated (which is greater as their weight is less) in dissipating and diffusing the gaseous products of human decomposition through the atmosphere, cannot be misunderstood, and ought to be fully appreciated. It is difficult, if not impossible, to calculate the distance to which such emanations may extend. The risk to persons inhaling an atmosphere thus deteriorated will depend upon the degree of its dilution, the period of time during which they may be exposed to its influence, and the power of resistance of the individuals themselves.

The above-described natural process of gaseous rarefaction from the surface of grave-yards, (during the warm season) is frequently imitated by the grave-digger. Compelled to dig deep graves, to save time and make the most of the ground, he drives out the gas by means of "lighted shavings, straw, paper, &c.," which the "old hand" would rather thus diffuse into the atmosphere, than venture to breathe himself. He knows by experience, that a single inspiration of these gases has produced instant death.

During night the earth no longer receives heat from the sun, and since the conditions most favourable for absorption of heat are likewise those which confer the greatest radiating power, the heat previously absorbed is soon lost by radiation; the upward current ceases; gases eliminated from grave-yards, vaults, &c., distributed in patches in the midst of human dwellings all over London, obey the impulse of gravity (modified and somewhat controlled by the law of diffusion), that is, if lighter than the atmosphere, they ascend; if heavier, they remain diffused through its lower strata, and inflict especial injury upon the inhabitants living in houses in the immediate vicinity of grave-yards, more especially where sunk areas, as in my neighbourhood, abut upon the burial-places.

I may here observe, that the health of the inhabitants of our large towns is scarcely less affected by the water they drink than by the air they breathe. I have had in my own practice abundant proofs of this assertion. About *twelve-thirteenths* of every dead body must dissipate, and the material of which it is compounded, pass off in a gaseous form into the atmosphere, as I have above explained—or percolate through the loose sub-soil in every direction. In many grave-yards the natural cohesiveness

* In March, 1841, another fatal proof was afforded of the shocking condition of the soil of the London grave-yards. The grave-digger of St. Bride's, Fleet-street, and two assistants, were employed in opening a pit, 20 feet deep, for the interment of the dead. Two of the men, more practised than the third, escaped; large quantities of earth, and an entire pile of coffins, fell upon and crushed the man, who was unable to get out of the grave. Such was the rotten state of the ground, that as the men dug, it fell in, in masses; upwards of *seven hours* were employed in the most severe and indefatigable exertions before he could be rescued, although the labourers had every mechanical assistance that blocks, falls, pulleys, hooks, &c. could afford. His head, pressed against the end of the pit, was discovered after two hours' digging. As if in revenge for the insults offered them, two dead bodies had rested themselves on his chest; whilst his legs, jammed between other coffins, and embedded in the earth, could not for many hours be extricated.

of the soil is destroyed by the intermixture of animal matter, which finds its way into the wells in the neighbourhood, and injures the health of the persons who use the water.

Sir James McGregor states in his account of the health of the army, that at Ciudad Rodrigo—where 20,000 bodies were interred in the space of two or three months, all those who were exposed to emanations from the soil, or obliged to drink the water from the sunk wells, were affected by malignant and low fevers and by dysenteries, and fevers putting on a dysenteric character. Dr. Reid also mentions another such fact. At Valladolid, during the war in Spain, the palace of the Holy Inquisition was appointed for the barracks of a British regiment. Under the colonnade was a well, the water of which was used by the soldiers for drinking and cooking. No regiment in the garrison was so unhealthy; and the prevailing disease was putrid fever, of which there was not the slightest symptom in any of the other regiments. At last the reason was discovered, skeletons were found in the well, several with pieces of flesh adhering to them.

In the summer of 1783 M. Faure, of Narbonne, employed three men to dig a cave in the cellar of his house, which had previously been occupied as an anatomical hall. In digging they came to the wall of a covered necessary, which had been used as a receptacle for the remains of human subjects; and on extracting a few stones, a disgusting putrid matter rushed through and suffocated them. M. Faure himself, going to inspect the work, was struck down senseless, and died in four days. Of nine persons who attempted to drag out the sufferers, six died. The smell increased to such a degree as to create a pestilence. The neighbours were obliged to remove, but a great many of them died. By the order of the Mayor, the cellar was at length filled up, and the house closed, but the malignant effluvia had already pervaded the town, and many of the inhabitants died.—*Dr. Usher Parson. American Journal of Medical Sciences, November, 1830.*

Lancizi, *de noxiis putridum effluviis*, has handed down to us numerous examples of contagion caused by the trenching of grounds which contained corpses.—*Navier, p. 14.*

A grave-digger, whilst digging a grave in the Eglise St. Alpin, found a body almost entire, although it had been interred a long time. He cut into it with his mattock, and was attacked by the infected odour of this body; he fell sick and died in twenty-four hours.—*Navier.*

In December, 1773, at a village near Nantes, several bodies interred in a church were disturbed, in order to afford space for the burial of a Seigneur. The body of one of his parents, buried in February preceding, was exhumed and brought into the church. Fifteen of those present died within eight days.

M. Haguenot, Professor of Medicine in the University of Montpellier, has recorded the death of three men under the most distressing circumstances—in one of the common graves of the parish church of Notre Dame, in that town. Two of these men were instantly suffocated in endeavouring to rescue the grave-digger, who had fallen dead in the grave. One man, who just escaped with life, was for a long period after his descent into the grave so pale and emaciated, that he bore throughout the city of Montpellier the name of the “resuscitated.”

A mild catarrhal fever prevailed at Saulieu, in Burgundy. The body of a very fat man was buried in the parish church of St. Saturnin. Twenty-three days afterwards a grave was opened, *by the side of the former*, to bury a woman who had died of the prevailing disease. A very fetid odour immediately filled the church, and affected all who entered. Of 170 persons who entered the church *from the opening of the grave until the interment*, 149 were attacked with a malignant putrid fever: the nature and intensity of the symptoms left no doubt that the malignity was owing to the infection of the cathedral.—*Maret.*

Letters from Paris give the *following further particulars* of the accident that happened on the opening of a grave in the body of the church of St. Saturnin, on the 20th of April, at Saulieu:—Of 120 young persons, of both sexes, who were assembled to receive their first Communion, all but six fell dangerously ill, together with the Curé, the grave-diggers, and 66 other persons. As the persons who were affected principally dwelt near the church, and the cause being known, a stop was happily put to the contagion, but not before it had carried off 18, among whom were the Curé and the Vicar.—*Dodsley's Annual Register.*

M. Maret, in a letter to the Editor of the *Journal Encyclopédique*, in 1775, states that the Curate of Arnay-le-duc, after having breathed the infected air arising from the dead body of one of his parishioners when he was performing the

funeral rites, contracted a putrid disease, which had reduced him to the last extremity.

Dr. Navier, who published his opinions in 1775, relates several instances of accidents which occurred after the opening of graves and the breaking up of several cemeteries. He thinks a period of four years insufficient for the destruction of a body inhumed. He examined three bodies which had been disinterred; one had been buried twenty, another eleven, and the third seven years; all the three were yet covered with flesh, in a state of putrefaction. Dr. Navier inveighs strongly against the practice of employing charnel-houses in the midst of the living, in which the remnants of carcasses and bones, still covered with putrefying flesh are exposed, the odour of which infects both churches and cities.

Dr. Haguénot disapproves of *the scandalous, and at the same time dangerous custom of carrying the remains of unburied bodies, bones, often surrounded with flesh partially decomposed, to places called reservoirs, to make room for new bodies, and thus to render GRAVES a source of PERPETUAL GAIN.*

The Abbe Rozier, in his "Observation de Physique, tome 1," relates that a person at Marscilles had ordered a piece of land to be dug up for a plantation of trees. During the plague of 1720 many dead bodies had been buried in this place; the workmen had scarcely commenced their labours when three of them were suffocated without the possibility of recovery, and the others with difficulty escaped.

Paré relates that in 1572 a pestilential fever spread nearly ten leagues round in Guienne, occasioned by the putrid exhalations of a pit into which several dead bodies had been thrown two months before.

A sexton having descended into a grave to strip a corpse, which had recently been deposited there, was suffocated, and fell instantly dead.—*Rammazini.*

At Riom, in Auvergne, the earth was removed from an ancient cemetery, with a view of embellishing the city. In a short time after an epidemic disease arose, which carried off many persons; the mortality was especially prevalent in the neighbourhood of the cemetery. Six years previous a similar event had caused an epidemic in Ambeit, a small town in the province.

It is stated by M. Bérard that the body of a very fat person had been buried about a foot and a-half deep, so that only a foot of ground and a stone seven or eight inches thick, covered it. In a short time, the vapours which arose were so offensive, that it was rendered necessary to disinter the body. Three grave-diggers undertook the work; two attacked with nausea and vomiting quitted the work, but the third, who determined to finish it, died ten days after.

The journal of the Abbé Rozier gives the history of another case. A grave-digger, working at the cemetery of Montmorency, struck a dead body which had been interred a year before; he was immediately overpowered by the vapours which arose from it.

Haller affirms that a church was infected by the exhalations of a single body twelve years after burial, and that this corpse occasioned a very dangerous disease in a whole convent.

Workmen were digging vaults in the church of St. Eustache, in Paris, which compelled them to displace some bodies, and to place those which came afterwards in a vault which had been long closed. Some children who went to catechism in the place, were made ill; several adults also were similarly affected. Dr. Ferret, Regent of the Faculty at Paris, was directed to report upon the matter; he found the respiration of the patients difficult, the action of the brain disordered, the heart beating irregularly, and, in some, convulsive movements of the arms and legs.

A place upon which a convent for nuns of St. Gènevieve, at Paris, had been situated, was afterwards built upon, and converted into shops. All those who first lived in them—especially very young persons—exhibited nearly the same symptoms as those above mentioned, which were attributed, with justice, to the exhalations of dead bodies interred in this ground.

In Orange, New Hampshire, a body was taken up ten weeks after burial, in order to be deposited in another place. Twenty persons were present at the disinterment, thirteen of whom were seized with fever shortly after, and several of them died. There was no other assignable cause for this fever, the season and place being otherwise quite healthy.

An American merchant-ship was lying at anchor in Wampoa Roads, 16 miles from Canton. One of her crew died of dysentery, and was taken on shore to be

buried. Four men accompanied the corpse, and two of them began to dig a grave. Unfortunately they began in a spot where a human body had been buried about two or three months previously. The instant the spade went through the lid of the coffin a most dreadful effluvia issued forth, and the two men fell down nearly lifeless. It was with the greatest difficulty their companions could approach near enough to drag them from the spot, and fill up the place with earth. The two men then revived a little, and with assistance returned on board. On the succeeding morning, they presented the following symptoms:—Very acute headache, with a sense of giddiness and dimness of sight; sense of extreme debility; pulse from 110 to 120, weak and irregular. On the fourth day (after the exposure to the poison), petechiæ appeared over the breast and arms, and in one of the men a large bubo formed in the right groin, and in the axilla of the same side, which speedily supplicated. To one of the men the disease proved fatal on the eve of the fourth day; to the other on the morning of the fifth.

One of the two men not engaged in digging the grave was attacked on the eighth day with similar symptoms. By active treatment, however, he recovered. The fourth man had a slight indisposition of no decided character.—*Cyclopæd. of Pract. Medicine*, p. 356.

I will conclude this letter with an important extract from a French medical writer:—

“ Il règne beaucoup de superstition parmi les habitans Espagnols. Il-y-a des créoles de cette nation qui dans la persuasion ou ils étoient, avant la prise de possession de San Domingo par les Français, que plus ils étoient inhumés près de l’autel, plus ils avoient de part aux prières des fideles, ont donné des sommes immenses pour être enseveli sous le maître autel. *Il est résulté de-là que le séjour des églises est devenu extrêmement malsain, que les hopitaux français qu’on y-a établis pendant le séjour de l’armée ont été funestes aux malades par les odeurs infectes qui s’en exhaliënt.*” He enumerates five varieties of insects produced by the putrefaction of the dead—states that it was with the most extreme difficulty they could be prevented annoying the sick—and that it was only by placing the feet of the bedsteads in vessels of water that they succeeded in getting rid of them—and concludes by affirming that the church converted into a hospital was a most unhealthy place. “ *C’était l’endroit le plus mal sain de tout l’hôpital, a cause de la stagnation de l’air et de la coutume qu’avaient les Espagnols d’y ensevelir les morts depuis plusieurs siècles.*”—*Topographie Medicale de San-Domingo Memoire sur la fièvre Jaune D’Amerique, par C. F. Roux.*

I have the honour to remain, Sir,

Your most obedient servant,

GEORGE ALFRED WALKER.

January 1st, 1843.

LETTER IX.

[From the *Morning Herald*, January 12, 1843.]

SIR,—I have already occupied so much of your valuable space, that in this concluding letter I will confine myself to a simple relation of facts occurring principally within my own knowledge. I have chosen this course because, although the facts detailed in my last communication were (in conjunction with repeatedly recurring epidemics) the chief causes of a wise and enlightened legislative policy in a neighbouring nation,—yet the majority of your readers may see in the comparative distance of time since their occurrence, an objection to their being received as grounds for legislative interference in our own country. I beg leave to state that where I have suppressed the name of the person, or of the place at which an occurrence happened, I have done so from motives which may be readily understood: to any honest inquirer I am ready, however, to divulge them.

Your readers, Sir, will do well to institute a rigid comparison between several of the cases given in my last letter and the present. They will find that the same causes have produced results very similar, if not identical. They will please to keep constantly in their remembrance, that instances of immediate death from the exhalations of dead bodies—rare in their occurrence, from the care taken by the grave-diggers—are yet infinitely less important in their consequences than that certain lowering and gradual depreciation of the health of the community, which is one of the inevitable con-

sequences of the present system, and that it would be perfectly absurd to expect that a *specific disease* should be even *ordinarily* induced by exposure to putrefying animal matter. The same variety of action has repeatedly been observed in the case of malaria in warm climates—thus, of four persons attacked, exposed to marsh miasmata, in the same place, and at the same time, one may be attacked by yellow fever—a second by dysentery—a third by fever and ague—and a fourth by remittent fever. Here we have four types of disease, usually regarded as distinct by nosologists—produced by one and the same cause. These facts, as I have hinted in my previous letters, tend to mark the distinction which should always be drawn between the NAMES of diseases and the CAUSES producing them.

On Friday evening, September 7th, 1838, an inquest was held in the Committee-room of the workhouse of the parish of St. Botolph's, Aldgate, on the bodies of Thomas Oakes, the grave-digger belonging to Aldgate church, and Edward Luddett, a fish-dealer at Billingsgate market, who came by their deaths that afternoon under the following circumstances:—About 11 o'clock the loud screams of a female were heard in the church-yard. At the bottom of a grave about 20 feet deep, Oakes, the newly appointed grave-digger was seen lying on his back, apparently dead. A ladder was instantly procured, and the young man Luddett, prompted by the noblest feeling, volunteered, from among many others, to descend to the assistance of Oakes. On reaching the bottom of the grave, he attempted to place the ropes under the arms of the deceased grave-digger; the instant he stooped to raise the head of Oakes for the above purpose, "he seemed as if struck with a cannon-ball," fell back with his head in an opposite direction to that of his fellow-sufferer, and appeared instantly to expire. King, the former grave-digger, made two or three ineffectual efforts to descend, but so foul was the air, that he was obliged to be drawn up again, and it was half an hour ere the bodies could be drawn out of the grave, by the assistance of a hook attached to a rope. Mr. Jones, surgeon, who was instantly on the spot, exerted himself in the most praiseworthy manner, but the two unfortunates were beyond the reach of medical skill. But for Mr. Jones's interposition another victim (who was about to descend into the grave) would have been added to the other two.

These men met with a premature death in what is called a pauper's grave. Such graves are dug by order of parish officers and others—are frequently kept open for many weeks, until charged nearly to the surface with dead bodies. This abominable, highly dangerous, and very disgusting practice, is now pursued in very many graveyards in London.

All the sudden deaths which have taken place appear to have been by asphyxia. When the gas does not immediately destroy life, it produces, first, an alarming sense of depression, and loss of muscular power; to this succeeds a state of slight reaction; the first shock so paralyses the bodily powers, and deteriorates the circulating fluid, that neither are equal, the one to bear, or the other to keep up, the increased stimulation induced by the reaction of the system. This second stage corresponds to the febrile stage of typhus fever, which it closely resembles, and is attended by vomiting and purging, with sometimes flatulent eructations of a highly fetid character. Then comes the stage of exhaustion, which depends on the quantity and reency of the gas respired, and the powers of resistance of the person attacked.

Wm. Green, a grave-digger, while employed in the church-yard of St. Margaret's, Westminster, was seized with faintness, excessive chilliness, giddiness, and inability to move his limbs. He was seen to fall, was removed home, and his usual medical attendant sent for. He was subsequently removed to the hospital, where he died in a few days. Mr. B., the medical attendant, was seized with precisely the same symptoms. He was attended by me. He died four days after the decease of the grave-digger.* The fatal effects of the miasm did not end here. The servant was seized on the day after the death of her master, and she sank in a few days. There can be no doubt of the fact that the effluvia from the grave was the cause of the death of these three individuals. The total inefficiency in the three cases of all remedial means, showed the great power of the virus or miasm over the animal economy from the commencement of the attack.—*Extracted from the Lancet of June 13th, 1840. J. C. Atkinson, Surgeon, Romney Terrace, Westminster.*

* "He appeared to be affected in a way that, I would say, nothing could counteract, but that death must inevitably take place, and the effect was as potent, I am sure, as if some deadly poison had been given to him. The attack seemed to be an annihilation of the nervous system. The circulating system went on irregularly and uncontrollably, till death removed the patient. * * *. These cases appeared to me to be marked by such symptoms as I considered were not to be accounted for in any of the different diseases with which we are at present acquainted."—*Vide Mr. Atkinson's Evidence before Select Committee on Health of Towns, p. 123, Answer 2251.*

The following important fact was communicated to me by one of the parties immediately concerned:—

A lady died September 7th, 1832, and was buried in the Rector's vault, in St. ———'s church, on the 14th. The undertaker having occasion to go down into the vault, being well acquainted with the localities, and somewhat pressed for time, with the assistance of the son of the deceased, removed the stone which covered the vault. The two descended, taking with them a light, which was almost instantly extinguished: upon reaching the lower step of the vault, both were simultaneously seized with sickness, giddiness, trembling, and confusion of intellect: the undertaker raised his friend, who had fallen on the floor, and with difficulty dragged him out of the vault; he himself, although previously in excellent health, was seized with vomiting the next day, and for twelve months rejected his food. He consulted Dr. James Johnson, who pronounced his case to be one of poisoning, from mephitic gases. The patient is convinced that his health has been completely ruined from this cause; he is now obliged, after a lapse of seven years, "to live entirely by rule." The health of the young gentleman who was with him was seriously impaired for a considerable period; his principal symptoms, those of a slow poison, developed themselves gradually—but surely; he was attacked with obstinate ulcerations of the throat, which were not removed until more than two years had elapsed, although he had frequent change of air, and the best medical assistance that could be obtained.

Mr. Tumbleton, a highly respectable undertaker, of No. 4, Warwick-street, Golden-square, about eleven years ago attended the funeral of an "Odd Fellow," at Enon Chapel, Clement's-lane, Strand; he smelled a disgusting stench; he was seized, within forty hours, with "cold chills;" went to bed; arose in the morning very ill, and consulted Dr. Burnett, of Golden-square, who ordered him home, and told him that he would "give him three weeks before he got up again." This prognostic was true to a certain extent, for the patient kept his bed nine weeks, with a malignant typhus, and all its concomitant evils.

William Jackson, aged 29, a strong, robust man, employed in digging a grave in the "Savoy," struck his spade into a coffin, from which an extremely disgusting odour arose. He reached his home with difficulty; had pain in the head, heaviness, extreme debility, lachrymation, violent palpitation of the heart, universal trembling, with vomiting. Jackson recovered in a few days, although considerably debilitated. Compelled by the poverty of his circumstances, he attempted, seven days afterwards, to dig a grave in Russell-court, Drury-lane. In this ground, long saturated with dead, it was impossible, without disturbing previous occupants, to select a grave; a recently buried coffin was struck into; the poor fellow instantly fell powerless, and was dragged out of the grave by John Gray, to whom he was an assistant. Jackson died 36 hours afterwards.

Thomas Beal, 2, Cromwell-place, Little Shire-lane, a strong man, aged 26, was engaged in the month of January, 1840, in assisting William West, the beadle of St. Mary-le-Strand, to clean up the Rector's vault; two of the men employed were sensible of a disgusting odour, which left a coppery taste in the throat. On the evening of the same day Beal had vomiting, with cough, considerable expectoration, and extreme lassitude, continuing five or six days. On the sixth day he consulted me, in consequence of a peculiar eruption, which first attacked the breast, and subsequently (within two days) spread over the whole surface of the body. On the fourteenth day from the appearance of this eruption a very painful enlargement of the glands in the left axilla and the groin of the same side occurred, both of which continued suppurating during six weeks; he has now, May 5th, 1840, the remains of the eruption over large portions of both arms. William West, who subsequently died of typhoid fever, was affected in precisely the same manner, excepting that he had no glandular enlargement; he imprudently entered the vault soon after it was opened. After his return home he complained to his wife that he had a peculiar coppery taste in his mouth; and within a few hours afterwards pain in the head, nausea, loss of appetite, and debility; in a few days he was attacked by an eruption, which first appeared on the chest, and soon covered the entire body; he remained a considerable time in a very debilitated state.

Mr. William Morgan, undertaker, 30, Russell-court, Drury-lane, being employed to make room in a brick vault for the interment of a gentleman, was compelled to arrange some bodies, inclosed in lead, which had been deposited in this vault. While standing on the top of some coffins they gave way, and the gas within them escaped. He was instantly sensible of a coppery taste in his mouth, with dryness and huskiness of the throat. He had confusion of intellect, pain in the head, giddiness and

trembling, especially of the lower extremities, with vomiting. His three assistants nearer the mouth of the vault were similarly affected, but in a less degree. Mr. Morgan was conveyed home, took to his bed, had what his medical attendant, Dr. Davis, called "a malignant typhus fever," and was unable to follow his employment for 13 weeks. He had previously been in excellent health, but is now, at the expiration of 12 years, completely shattered in constitution, and has incomplete paralysis of both arms.

Mr. Jones, undertaker, of Devereux-court, Essex-street, Strand, deposited a body contained in a leaden coffin, in the catacombs of Kensall Green Cemetery. After a lapse of about three months he was informed by the Secretary of the Company that "the coffin leaked, and that he must see to it." Mr. Jones and assistants accordingly went to the cemetery. On inspecting the leaden coffin, it was found that a small hole existed—this was enlarged with a gimlet by an assistant, Mr. T. Moxley; the gas which escaped extinguished a candle three times, and rendered him incapable of following his occupation for several weeks.

In the month of August, in the year 1835, a vault was opened in the aisle of the church of Little Berkhamstead, Herts; the body of a child had been placed in this vault about fifteen months previously. Upon removing the stone a peculiarly offensive smell was emitted. My informant, the then sexton, Benjamin Smith, now living, No. 8, Princes-street, Drury-lane, was instantly affected with nausea, followed with diarrhoea, excessive trembling, prostration of strength, and loss of appetite; these symptoms continued some weeks. He believes that his health has seriously suffered in consequence. The bricklayer and labourer employed in opening the vault were also affected, and Mrs. Smith, whilst cleaning the inside of the church, several days afterwards, was sensible of a very offensive odour, which was perceptible during divine service on the Sunday following.

During the demolition of the old church of St. Dunstan's, the dead in the vaults were removed. The labourers employed were well supplied with brandy, and under the influence of a half-drunken excitement completed their task. William Mutton, a labourer, a few hours after, complained of a nauseous taste in the mouth and throat, severe pain in the chest, accompanied with cough; his skin subsequently became of a deep yellow tinge, and extremely harsh and dry. This man was at times so affected by the effluvia, that he was compelled to support himself against the wall of the vault. In removing the body of a man who had committed suicide, the gaseous exhalation was so powerful that he was rendered unconscious for a considerable period. He invariably declared that this was the cause of his death.

My pupil, Mr. J. H. Sutton, accompanied by an individual who for many years had occasionally been employed in burying the dead, entered the vaults of St. — church, and a coffin, "*cruelly bloated*," as one of the grave-diggers expressed it, was chosen for the purpose of obtaining a portion of its gaseous contents. The body had, by the date of the inscription on the plate, been buried upwards of eight years. The instant the small instrument employed entered the coffin, a most horribly offensive gas issued forth in large quantities. Mr. S., who unfortunately respired a portion of this vapour, would have fallen but for the support afforded by a pillar in the vault. He was instantly seized with a suffocating difficulty of breathing (as though he had respired an atmosphere impregnated with sulphur); he had giddiness, extreme trembling, and prostration of strength; in attempting to leave the vault, he fell from debility; upon reaching the external air, he had nausea, subsequently vomiting, accompanied with frequent flatulent eructations, highly fetid, and having the same character as the gas inspired. He reached home with difficulty, and was confined to his bed during seven days. The pulse, which was scarcely to be recognised at the wrist—although the heart beat so tumultuously that its palpitations might be observed beneath the covering of the bed-clothes—ranged between one hundred and ten and one hundred and twenty-five per minute, during the first three days: for many days after this exposure, his gait was very vacillating.

The man who accompanied Mr. Sutton was affected in a precisely similar way, and was incapacitated from work for some days. His symptoms were less in degree; prostration of strength, pains in the head, giddiness, and general involuntary action of the muscles, particularly of the upper limbs, continued for several days afterwards: these symptoms had been experienced, more or less, by this person, on many previous occasions, but never to so great a degree. I have myself suffered from the same cause, and been compelled to keep my room upwards of a week.

A grave-digger was employed to obtain a portion of gas from a body interred in lead, in the vaults of St. —; the man operated incautiously; he was struck to the earth, and found lying upon his back; he was recovered with considerable difficulty.

Four bodies had been placed in a tomb in the Eastern Cemetery, into which it was found water had penetrated, the first body had been interred in February, 1836, the last in April, 1839. Two grave-diggers employed in the removal of the water and the dead bodies, were from the commencement of their labour struck with the fetid odour given off, yet they continued their work. They had removed a large quantity of water and two coffins, when in attempting to seize the third, their feet slipped, and the water remaining in the tomb was violently agitated by their fall. One of the men fell instantly lifeless. His comrade made several efforts to raise him; at the third attempt he fell, deprived of consciousness, upon the body of his unfortunate companion; assistance being quickly rendered, the men were withdrawn from the tomb. The grave-digger who first fell was dead; the other, notwithstanding the attentions of two medical men, remained unconscious during six hours—for the space of a month afterwards he suffered greatly from difficulty of breathing and weakness of the legs, which in the course of the same month were affected with a general desquamation.—*Annales D' Hygiène, &c., January, 1840.*

I was called one Tuesday to see a gentleman advanced in life, well known to many members of this House, and intimately known to the Speaker. This gentleman on the Sunday previous went to a dissenting chapel, where the principal part of the hearers as they died were buried in the ground, or vaults underneath; I found him labouring under symptoms of malignant fever, and on questioning him as to its cause, for it was so malignant that its fatal issue was evident, he said that on going up the steps to the chapel he felt a rush of foul air issuing from the grated openings existing on each side of the steps. The effect upon him was instantaneous. It produced a feeling of sinking, with nausea, and so great a debility that he scarcely could get into the chapel; he remained a short time, but finding this feeling increase he went home, was obliged to go to bed, and there he remained. Up to the time of my ascertaining the origin of his complaint he had slept with his wife. He died eight days afterwards. His wife caught the disease, and died in eight days also, having experienced the same symptoms. Means of counter-action were used, and the fever did not extend to any other member of the family.—*Vide Evidence of James Copland, Esq., M.D., F.R.S., Censor of the Royal Col. of Phy., p. 157, Answer 2,662.*

In the month of June, in the year 1835, a woman died of typhus fever, in the upper part of the house, No. 17, White Horse-yard, Drury-lane; the body, which was buried on the fourth day, was brought down a narrow staircase. Lewis Swalthey, shoe-maker, then living with his family on the second floor of this house, and now residing at No. 5, Princes-street, Drury-lane, during the time the coffin was placed for a few minutes in the doorway of his room, was sensible of a most disgusting odour, which escaped from the coffin. He complained almost immediately afterwards of a peculiar coppery taste; in a few hours afterwards he had slight sensations of chilliness, which before the next sunset had merged into repeated shiverings of considerable intensity. That evening he was confined to his bed—he passed through a most severe form of typhus fever; at the expiration of the third week he was removed to the fever hospital and recovered. He had been in excellent health up to the instant when he was exposed to this malaria.

Mr. Mason, a patient of mine, some years since was exposed to similar influence. A stout muscular man died in his house in the month of June, after a short illness; on bringing the body down stairs, a disgustingly fetid sanies escaped from the coffin in such considerable quantity, that it flowed down the stairs. Mr. M. was instantly affected with giddiness, prostration of strength, and extreme lassitude; he had a peculiar metallic taste in the mouth, which continued some days; he believes that his health has been deranged from this cause.

A policeman on night duty in a neighbourhood immediately adjoining two grave-yards, has frequently smelled a peculiar and disgusting stench. The smell was most offensive between the hours of 12 and 3 in the morning. As a consequence, he was seized with vomiting and giddiness, so that he was often compelled to seize the nearest support to prevent his falling. In one instance he was so seriously affected, that he was obliged to seek immediate medical assistance, and incapacitated from performing his duties for some days. He had “not had a day’s illness” previous to this exposure, and since his removal to “another beat, assures me that he is in as good health as any man.”

William Chamberlain, No. 1, Little Wild-street, Great Queen-street, was many years since employed in preparing a vault in the Green Ground, Portugal-street, Lincoln’s Inn Fields, for the reception of a body. He had placed one foot on a leaden coffin in the vault and the other on the brickwork of the entrance, when he perceived a “gush, like a puff of wind, come from the coffin under his foot. He felt his power leave him, and from that time (although he never had a day’s illness

previously) he has never been well." His health has gradually depreciated. Since the year 1836, he has had incomplete paralysis of the upper and lower extremities, and is now perfectly incapable of following any laborious occupation.

In 1815, during one of the hottest summers ever remembered, the Calton churchyard, Edinburgh, was cut through, in order that a new London-road might be made. Several hundred bodies were exposed. One man, named M'Carter, was suffocated in the act of opening a grave, and towards the end of July an epidemic fever showed itself in Calton-place, Leith-terrace, and Catherine-street—the direction in which the easterly wind blew from the churchyard, and the streets in which the smell was peculiarly offensive.

In a thickly populated and widely extended parish in which there was but one church, situated in the midst of a burial-ground, and provided with spacious vaults crowded with dead, it became necessary that the building in which some charity children had been educated should be pulled down; the school, in the meantime, was removed to a building situated immediately over these vaults, and into which an iron grating from the vaults opened. The effects were soon apparent. The rosy freshness of health soon disappeared, and its place was supplied by ashy pale and cadaverous complexions. Sickness soon thinned their ranks, and those who were able to attend were languid and weak, unfit either for corporeal exercise or mental exertion. The cause being discovered, and the school having been removed to a healthier locality, the children were speedily restored to their wonted state of health and vigour.

A short time ago a grave-digger employed in the ground of St. Clement Danes, Strand, excavated a family grave to the depth of 16 feet. When the coffin was to have been lowered, he went down to the bottom of the grave, and had what is called "a turn;" he felt as if he had his mouth over brimstone (the taste was "sulphury"); he called out, but was not heard; he then motioned with his hands, and a rope was lowered down; he seized hold of the rope, and was pulled up to the surface; he was "queer" for a day or two.

The following case deserves record along with the innumerable other instances of sickness, and even death, caused by the poisonous gases evolved by the decomposition of human bodies:—"A young man of the name of John Mowbray, a sculptor and modeller, in the employ of Messrs. Walker, being occupied in taking casts from the Norman capitals discovered in excavating around the foundations of the north-west pier of the tower of St. Mary's Church, Nottingham, was suddenly seized with violent sickness, nausea, and pains in the head, upon the workmen opening a grave close by his side. Several lead coffins were taken out, and one of the workmen having accidentally struck his pick-axe into one of them, a most disgusting and noisome stench issued, although some of the coffins had been interred upwards of a century, and the one in question 62 years. He says, that instantly upon the opening of the grave, upon inhaling the pestiferous gas evolved, he experienced a most nauseous coppery sensation upon the tongue and palate, together with swimming in the head, and violent sickness; these symptoms continued upwards of a week, although active means were employed."—*Nottingham Journal*, Jan. 20, 1843.

These, Sir, are a few, and but a few, of the irrefragable proofs of the injury inflicted upon the living by emanations from the dead. They are a portion of the results of a system as immoral as it is unhealthy, as unjust as it is impolitic, as dangerous as it is disgusting. In conclusion, I beg to state that, although I have been so designated, I am no partisan. It has been attempted, most unfairly, to *suppress* and *distort* evidence, which the objectors know perfectly well they can neither invalidate nor honestly impugn. This disingenuous course of proceeding (to use no harsher term), so far as it concerns myself and the cause which, from a very long and deep conviction, I have espoused, I could have afforded to leave to the neglect it deserves, but I felt that I should not be performing a duty which I owed to others, if not to myself. You have enabled me, Sir, to bring before your readers some additional facts, statements, and arguments—which may tend still further to elucidate a deeply-interesting subject. To you, Sir, I am much indebted for affording me such ample space in the *Morning Herald*. Although my remarks have extended further than I at one period desired, I trust that I have not abused the privilege you have so kindly granted me, by an unprofitable elongation of the discussion.

Most sincerely hoping that individuals of all parties and sects will join in strengthening the hands of those who desire to accomplish this great moral and sanitary reformation,

I have the honour to be, Sir, your most obedient servant,

London, January 7, 1843.

GEORGE ALFRED WALKER.



